Grain Collection Alternatives Pilot Project
Final Report

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Executive Summary

The grain handling and transportation system has undergone dramatic changes in the last decade. These changes have included elimination of transportation subsidies, abandonment of branch lines, closure of most small country elevators and the construction of a number of high-throughput elevators on main lines and main branch lines.

Farmers were told this system would bring greater efficiencies to grain handling and transportation and that this would be reflected in lower costs.

What farmers soon found out was that the new system did not account for the cost of the road damage that occurs as great volumes of grain are forced to the highway system. They also found out that, although there might be some cost savings in the new system, these savings are not always passed back to farmers.

Farmers have also begun to question whether the new system is the most cost-effective way to move grain.

The Grain Collection Alternatives Pilot Project involved two farm groups, West Central Road and Rail Ltd. and the Golden Prairie Short Line Rail Co-operative, which, when the project was initiated, were dealing with issues of branch line abandonment and elevator consolidation. The Project was designed to develop and test a concept for marketing farmers' grain that would utilize modern logistics principles to reduce costs in the system. The Project's goal was to ensure that these cost reductions were returned to farmers in the form of increased revenue for the grain they sell.

The Project was funded by contributions from the Saskatchewan Grain Car Corporation, Agriculture and Agri-Food Canada through the Canadian Rural Partnership Program, and the Canadian Wheat Board. Funding was also contributed in-kind by the Canadian Grain Commission and the two farm groups.

The Project set out to develop a template for establishing a company that would implement modern logistics principles in handling grain. The intention is that groups wishing to follow the model developed in the Project will be able to take this template and adapt it to their specific circumstances.

The company, referred to by the generic name "Farmco" in the report, would rely on:

- On-farm storage of grain
- Obtaining detailed information about that grain, and storing it in a computer database
- Using that stored information to develop a marketing program in conjunction with the Canadian Wheat Board
- Employing minimal trackside facilities, with a reliance on direct loading to railcars
- Using a computer program developed by the Project to assist in blending grain to optimize value
- Ensuring fair assessment of protein and dockage by utilizing CGC determination of these factors
- Creating a competitive environment that would increase returns to participating farmers
- Working with railways and port terminals to ensure efficient movement of grain

Project Highlights

- Developing grain blending computer software.
  The Project committee, in conjunction with Vemax Management of Saskatoon, developed a software program that can be used to blend stocks of grain to optimize the economic value of that grain. By inputting grading parameters and current prices to the program, it can be used for any type of grain grown on the Prairies.
- A study, which revealed the benefits of bypassing the country elevator system in favor of direct loading.
  The Project conducted a study, which clearly showed that farmers who bypass the country elevator/inland terminal system, and avoid these costs, can gain benefits averaging over $6 per tonne, even without blending. This study also showed that farmers often make sub-optimal choices when deciding how to market their grain. These choices could be enhanced if farmers sought better information about the grade and other attributes of their grain, and if they more clearly understood the cost of various marketing options.
- Experiments showing lack of farmer awareness of protein loss, dockage, etc.
  Several experiments conducted by the project team indicated that farmers often are not receiving the full benefit of the protein in their grain when they sell through the grain companies. There were also indications that dockage in grain shipped through elevators and inland terminals is often greater than that found by the CGC. Farmers are generally not aware of the nature or extent of the losses they suffer here.
- Template.
  The project developed a template for the structure and operation of a grain marketing concept, which will increase returns to producers and enhance efficiency in the system. This template covers areas including corporate structure, the relationship with the Canadian Wheat Board, the contractual arrangements between Farmco and the producer, and a sample business plan.
- Sampling Protocol
  Analysis by the project showed that many farmers do not use appropriate techniques to obtain representative samples of the grain they produce. The beginning point of the Farmco concept is a representative sample. The project has suggested a protocol and sampling device that will allow farmers to obtain consistently accurate samples.

1.0 Introduction

The efficiency of the grain handling and transportation system is of great concern to farmers since it affects their bottom line. In some parts of the Prairies, branch line abandonment and elevator closures have also generated a great deal of anxiety. Many farmers are not convinced they will be better off under this rapidly consolidating system.

In an effort to deal with branch line abandonment by the railways, farmers in several parts of the Prairies have organized, formally and informally, to look at means of retaining grain handling and transportation services in their communities and regions. A growing interest in producer car loading, and the savings this can bring to farmers, has been a feature of most of these groups.

Two such groups, West Central Road and Rail Ltd. and the Golden Prairie Short Line Rail Co-operative, teamed up in 1999 to spearhead a project with the stated intention of examining the grain handling and transportation system to develop strategies that will maximize returns to farmers.

The result has been the Grain Collection Alternatives Pilot Project, which received funding from the Saskatchewan Grain Car Corporation, Agriculture and Agri-Food Canada through the Canadian Rural Partnership Program, and the Canadian Wheat Board. The two participating farm groups, as well as the Canadian Grain Commission, made substantial in kind contributions.

Each group mentioned above had representation on the steering committee that guided the Project, and in addition to their formal participation at meetings, spent countless hours discussing ideas, and critically examining the concepts being tested.

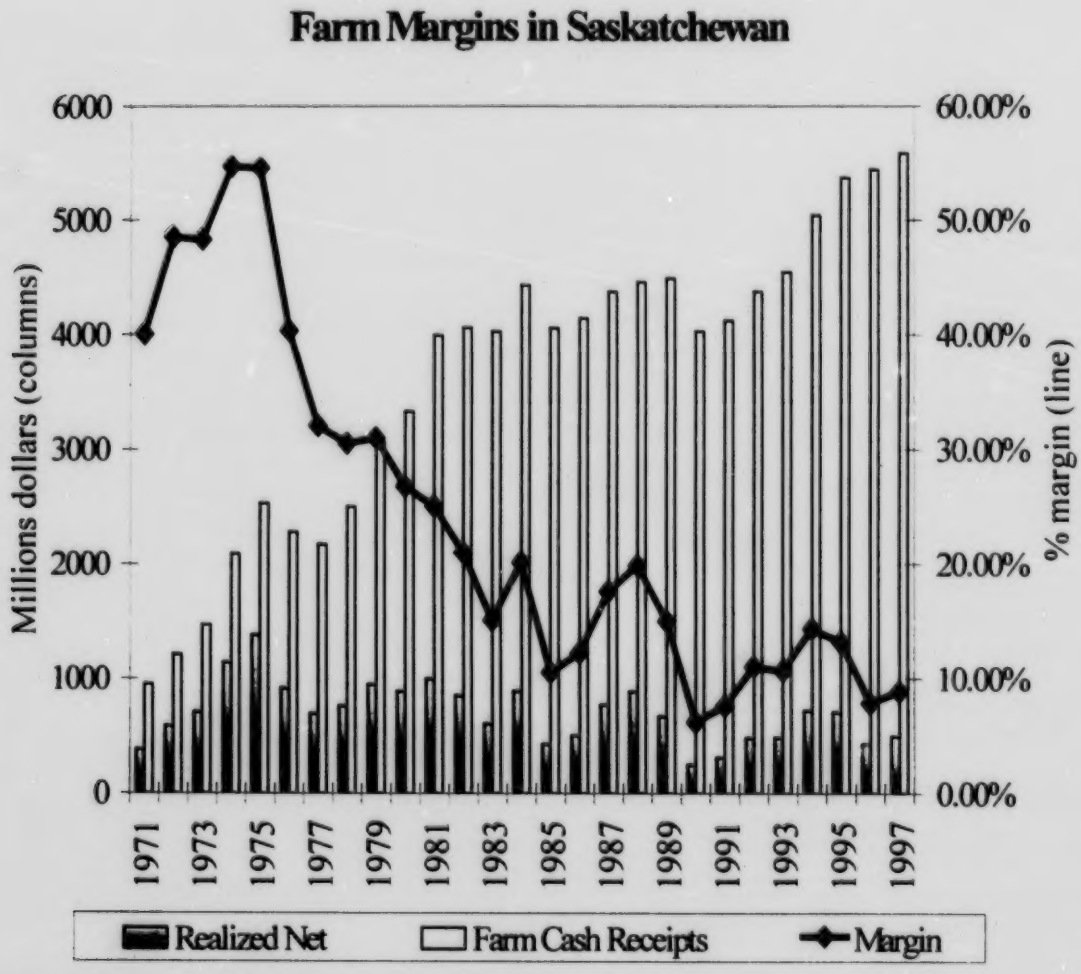
Early on in the Project, the committee began to refer to the concept being envisioned by the simple name "Farmco". The term Farmco is used in this report to refer to a series of processes that can be implemented to create a modern logistics system in the grain industry. While the name is hardly original, it has come to be associated with the work of the Project, and many farmers who are aware of the Project know it under this name.

2.0 Rationale for the Project

The agriculture sector in Canada is in a steep decline. Over the past three decades, the spread between farm cash receipts and the money the farmer retains as net income has increased steadily. Farm cash receipts have risen substantially since 1970, increasing some six fold, but farm expenses have risen even faster. In the early 1970's, farmers' input costs were equal to about 40% of their gross income. Today they consume between 90 and 95% of a farmer's gross income. The result is that farm incomes have fallen and remain barely above negative margins in many cases.

Figure 1

Farm Cash Receipts vs. Net Farm Income

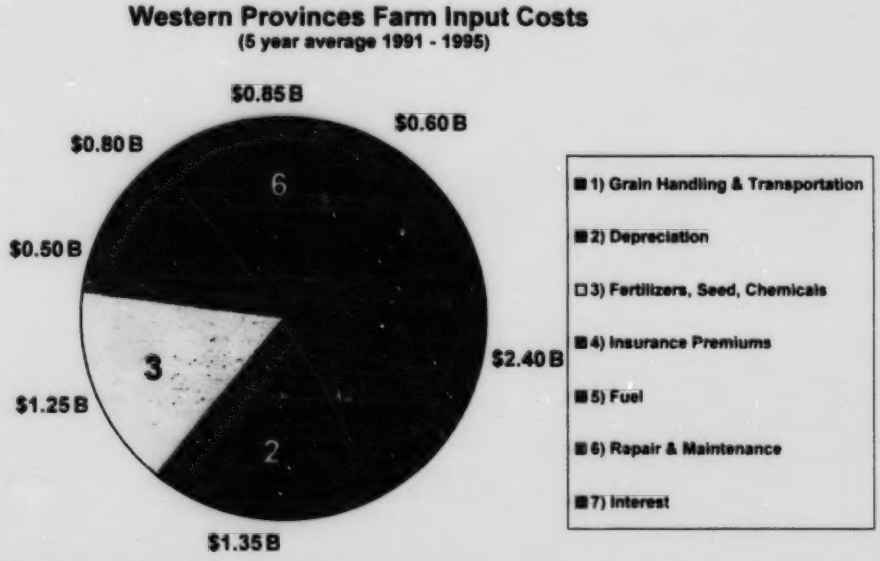


Source: Saskatchewan Agriculture and Food

Farming no longer affords a decent living to many farm families. Farm populations are shrinking rapidly, farmers are increasingly seeking off-farm work to obtain a reasonable level of income, rural communities and businesses are threatened and losing viability, and farmers are placing more and more pressure on governments to replace what the marketplace has failed to provide.

An examination of farm inputs reveals that grain handling and transportation represent a very significant portion, some one-third, of input costs.

Figure 2



Source: Saskatchewan Highways and Transportation

These costs have been increasing, despite rapid rationalization in this system. Railways have abandoned branch lines, and grain companies have closed almost all their small elevators, while constructing large high-throughput elevators (HTEs) on main lines. Farmers are seeing their cost to haul grain to these new facilities rising with the increased length of haul. Everyone is witnessing the destruction of Saskatchewan's paved highway network with the increase in grain traffic.

For many farmers, the current system provides them with the worst of all worlds. Their costs are increasing, even the handling costs at the supposedly more efficient HTEs. Their road network is crumbling, and affecting all aspects of the rural economy. Rail costs have not come down, despite extensive branch line abandonment. Small urban communities are losing a great portion of their tax base as elevators close and branch lines are abandoned. Trucking incentives provided by grain companies seldom cover increased trucking costs to the new HTEs.

The system which the grain companies have created does not seem to line up in the same direction as industrial society in general, and the grain industry in particular. Industrial society is increasingly

moving away from warehousing of products, and is instead moving toward just-in-time delivery. Logistics management is attempting to eliminate unnecessary processes in the name of greater efficiency. HTEs offer few segregations for grain, and yet the emphasis in grain production is increasingly toward greater product segregation and identity preservation.

Farmers are experiencing a drop in the prices they can obtain for most grains. Subsidies in the US and the European Community are much of the reason for this. The Government of Canada has not been able to counter this in world trade negotiations. Farmers can have little impact on the prices they receive for their grain.

Given this, it is clear farmers must reduce their costs if they are to improve their net incomes. In examining areas of potential cost reduction, it is logical to look at the area where the greatest costs are incurred. Clearly this is the area of grain handling and transportation.

There has been a number of studies that have examined the grain handling and transportation system from the aspect of increasing efficiency and reducing costs by reorganizing the processes. Each of these has indicated that not all the steps in the current system provide value back to the producer.

3.0 Grain Collection Alternatives Pilot Project Concept

The project set out to describe and develop a theoretical but functional concept for marketing CWB grains which employs modern logistics principles to reduce costs, increase efficiencies, increase revenues and provide greater returns to farmers. This report is intended to serve as a template for groups that wish to implement the concepts developed by the Project. Although, for the most part, this report outlines a specific way of doing things, there are many possible variations on the theme. It is anticipated that groups, which take up the challenge and establish their own "Farmcos" will tailor the ideas in this report to suit their particular circumstances.

It is also clear that, though this Project examined the system for CWB grains, the logistics processes described could also apply to other crops.

3.1 Producer Cars an Early Model

One concept that had a great impact on the Pilot Project is that of the producer car. Producer cars are railcars which are ordered by farmers, in which they load their grain directly, usually with their own grain augers and other equipment. When loading producer cars, farmers bypass the country elevator system and avoid dealing with an inland grain company at all. Though producer cars were once a popular way to ship canola, changes to the basis point for canola contracts virtually eliminated the benefits of using producer cars for this commodity. In recent years, producer cars have come to be mainly associated with the movement of Canadian Wheat Board grains – wheat, durum and barley.

The producer car brings with it a very significant benefit to farmers. Bypassing the elevator system allows farmers to add as much as $1,000 per car to the value of a carload of grain. Farmers are sometimes able to achieve even greater savings than this since, at times, grain shipped in producer cars is found to satisfy the requirements for commercial cleanliness when it is graded and the dockage measured at port by the Canadian Grain Commission.

3.1.1 West Central Road and Rail's role in producer car shipments

In recent years, producer cars have gained popularity among farmers on branch lines where grain companies have closed the elevators. One of the first groups to load producer cars in an organized fashion was West Central Road and Rail Ltd. West Central is a company with a broad based membership among farmers along five rail branch lines in the west-central area of Saskatchewan.

In 1998, the grain companies were closing elevators and CN was preparing to abandon these branch lines. Farmers in the area saw the value of retaining their rail lines, but were faced with the impending closure of all the grain handling facilities. They organized to buy the branch lines from CN, with the goal of operating them as a regional short line. They also knew that a successful short line requires traffic, so they began to load producer cars.

In order to obtain railcars to load, the group had to place enough orders at a time to meet the minimums CN imposed on the train run. In order to do this, West Central began to develop an

organized system to encourage the loading of producer cars. A natural next step occurred when West Central offered those cars on a tender basis to the grain terminals that might potentially handle the grain at port.

3.1.2 Port tendering of producer cars

Grain companies derive a significant amount of revenue from terminal handling and cleaning. The number of cars terminals receive for CWB grains is determined by the number of cars awarded to the grain company by the Canadian Wheat Board. Producer cars are not part of the award to grain companies, so a grain company that receives producer cars is able to increase its terminal handlings while still getting as many cars as before from the CWB.

Several grain companies responded to West Central's tender, and one was selected. That agreement with West Central remained in place for 3 years, and was extended to include producer cars loaded anywhere in Saskatchewan, if they were administered through West Central Road and Rail. It returned additional money to producers who loaded cars through West Central Road and Rail. For the 2001/2002 crop year, West Central has negotiated agreements with terminals belonging to other grain companies.

In 2000, another grain company made a similar terminal arrangement with farmers in south-west Saskatchewan.

Thus, it can be seen that a further benefit to producers from producer car loading is the ability to generate competition for that grain at port. This can generate returns for those farmers.

4.0 Attitudinal Study Regarding Producer Cars

Despite the positive aspects to producer car loading, there are also some negative factors and perceptions that impact on a farmer's decision to load, or not load, cars. In order to determine which of these factors are most significant, the Grain Logistics Pilot Project engaged Decision Research of Regina to conduct a survey of farmers' attitudes toward producer cars and their perception of the strengths and weaknesses of this option.

A complete copy of the survey report is attached as **Appendix One**. The information gleaned from this survey will be useful to anyone wishing to set up a marketing system that incorporates all or some of the Farmco concept. While this report touches on some aspects of the survey in the following paragraphs, readers are encouraged to look at the entire report in Appendix One.

4.1 Benefits from loading producer cars.

Three quarters of respondents to the survey recognized there are significant monetary benefits from loading producer cars, but generally tended to underestimate the savings that can actually be realized.

4.2 Impediments to loading producer cars

While farmers realize there are financial benefits, many are reluctant to use producer cars and the vast majority of them simply do not. The survey probed the reasons for this:

- *40% of non-users said they believed they would not receive as high a grade or protein in a producer car as they would at an elevator.*
  Project findings: The Collection and Analysis Study (see section 6.2) indicated that farmers will generally receive the same grade in a producer car as i.. an elevator. It is also a fact that farmers can at times drop a grade in a producer car, and still be left with a higher net return. The Project also did some experimentation that indicates producers typically will receive higher protein in a producer car than at the elevator.

- *Nearly 50% of non-users were concerned about the length of time to get paid for producer car shipments.*
  Project findings: When using the services of groups like West Central Road and Rail, payment for producer cars generally occurs within a week of unload.

- *35% of non-users believed they could get a better deal shipping through HTEs/elevators than through producer cars.*
  Project findings: While this belief was consistent with the number believing they would get better grades and protein through HTEs/elevators, it conflicts with the results of the Collection and Analysis Study. That study indicates that two thirds of farmers who choose to ship through elevators would be better off using producer cars.

- *46% of non-users indicated a fear of derailments, leakage or other losses in producer cars.* **Project findings:** The reality is that these factors are almost never an issue for producer car users. Railways insure the product in transit, and leakage is extremely rare. When it has occurred, the railways have settled the claims with little conflict between the parties.

The issues cited above represent the major concerns of non-users of producer cars. These issues largely are not consistent with the facts, as is indicated by the comments below each issue. However, they do clearly indicate that one of the major barriers to the use of producer cars is a lack of factual information.

This is further confirmed by the **75% of non-users who said they would be more likely to use producer cars if they were "more familiar with the process and procedures involved in using producer cars."**

Farmers were also concerned about the restricted time frames involved in loading cars and the lack of access to a scale for weighing loads.

Another major barrier to the use of producer cars was identified as the "paperwork". When asked if there is one reason why they are reluctant to use producer cars, 27% of non-users who replied spontaneously offered that it was due to the paperwork required. It is possible to infer from this that a significant number of producers would be more likely to use producer cars if they were offered a service that did not require them to be involved in the "paper" side of producer car loading.

4.3 Initiatives to increase producer car appeal

- 65% of survey respondents indicated they would be more likely to use producer cars if they could obtain immediate payment on grain shipped by producer car.
- 75% said that an organization to co-ordinate and assist with paperwork would increase the likelihood they would use cars.
- 62% found trackside storage desirable.
- 79% said that having grain graded prior to loading would be beneficial.
- 88% said access to a trackside scale was appealing.
- 88% would be more likely to load if they had a guarantee of the grade they would receive.
- 70% felt assistance in effectively blending grain would be an important asset.

4.4 Problems with access to producer cars

In addition to the problems some farmers perceive with loading producer cars, there are sometimes difficulties imposed by the railways. Both major railways have attempted to restrict the number of loading sites at which they will accommodate producer cars. Although the railways are concerned with the apparent inefficiency of loading small numbers of cars at many sites, some sites are nevertheless restricted to very small car numbers, despite having ample space on the siding to accommodate more cars.

A further problem has occurred on short lines that provide traffic to CN. Despite having sold lines to short line operators, CN refuses in some cases to allow the short lines to control their car spots. CN instead determines how many producer cars it will allow to be spotted on sidings on the short lines. There is often no operational reason for these numbers, and short lines indicate they would accept larger numbers of cars were it not for CN's restrictions.

CN's list of producer car sites can be found at:
www.cn.ca/Index/prodctsservices/grain/Canadaorigin/en_KFGrainCNProducerCarLoaderStationList.shtml

CP's list of producer car sites can be found at:
www.cpr.ca/Internet/Content/BusinessLines/Grain/producer.asp

These lists are attached to this document as **Appendix Two**.

It is possible for producer car shippers to trace the progress of their rail cars by using the car trace mechanisms available on the internet websites of the two railways. These are www.cn.ca and www.cpr.ca

4.5 Producer cars are not enough

The results of the survey, as well as the experience of West Central Road and Rail, indicate that producer cars, though they return significant benefits to producers, will not in themselves generate enough traffic to ensure the survival of a branch line or a short line railway. The problems which farmers associate with producer cars might be overcome through a long period of education and evolution, but most farmers struggling with branch line abandonment and elevator closures are aware they do not have a long time.

Nevertheless, the one major strength of the producer car is that it allows farmers to access railcars without becoming a licensed grain company, and competing for CWB car orders. Legislation in the *Canada Grain Act* ensures that farmers who wish to load their own railcars are permitted access to cars.

The limitations of the producer car concept meant the steering committee found it necessary to look beyond the producer car, though the Farmco concept incorporates aspects of the producer car mechanism. Farmco uses the access to railcars generated by producer car legislation to move grain handling and transportation in the direction of a modern logistics system.

5.0 A Modern Logistics System

A primary objective of a modern logistics system is to reduce costs through reduced handling, inventory management and just-in-time movements of product. An efficient logistics system moves products only when it must, and reduces the need to warehouse products.

The Grain Collection Alternatives Pilot Project examined the grain handling and transportation system in light of these principles.

The Project also took a critical look at the current system to identify places where farmers' lack of information is affecting their ability to achieve maximum returns from the marketplace. As well, it examined the potential to increase the value of farmers' grain through blending, and through increasing competition in the grain handling and transportation system.

In all these things, the focus was squarely on ensuring that farmers receive the benefits of greater competition and an improved logistics system.

5.1 Steps in the grain handling and transportation system

The current grain handling and transportation system is composed of several steps:

1. Grain is taken from the field at harvest and stored in bins on the farmer's land.
2. When a contract opens or the grain is called forward, the farmer delivers the grain to a facility such as a grain elevator. At this time, it is graded and the farmer receives payment based on the grade and protein assigned by the grain company.
3. The grain is stored in the elevator, until such time as it is called forward for delivery to port. While in storage it may be blended with other grain and perhaps cleaned.
4. When there is room for that grain at a port terminal, or when a sale is imminent, the grain is loaded to railcars and delivered to a port terminal. If not cleaned inland, the grain will generally be cleaned at the port terminal.
5. The grain is stored in the port terminal until a ship comes to take the grain to a customer.

While each of these steps may seem necessary at the present time, several of them may not add significant value for the farmer. This system requires that grain be stored in three separate locations before finally reaching the hold of a ship. Each of these steps carries a cost, and all of these costs are ultimately borne by farmers.

A modern logistics system would reduce much of the necessity for trackside storage.

1. Grain would instead be sampled in the farmer's bin, and detailed information about that grain would be stored in an electronic database. This database would be subject to analysis to ascertain the blending potential of the grain. The stored information concerning the grain would be used by the marketer of the grain to determine when to call it forward for delivery to port.
2. When called for delivery, the right grain would be brought to trackside, and if desirable, cleaned and blended there, or loaded unblended into railcars for blending at port. Rail cars would be sorted to allow rapid unloading at port. The objective would be to bring the right grain forward

for just-in-time delivery to a rail loading point. Delivery would be co-ordinated to the arrival of the train.

3. The railcars would be taken as a unit to a single port facility, and arrive in time to match the arrival of the ship coming to pick up the grain. The grain would be loaded through a direct hit facility.

In an ideal situation, it would be possible to eliminate or minimize inland storage, reduce the need to store grain at port, minimize rail switching and ensure that the correct grain reaches the ship. Eliminating these steps would reduce the cost of the system. Inland and port storage represent a major cost to farmers. Those farmers now loading producer cars are well aware of the savings that accrue to farmers who bypass the inland elevator system.

6.0 Project Activities

In the course of examining the many aspects of creating a modern logistics system, the Project carried out a series of studies, projects and endeavors designed to develop and test the concepts, which emerged from the many discussions that took place around the steering committee table.

The results of these studies and projects allowed the committee to refine the ideas behind the concept.

6.1 Computer facilitated grain blending

One of the strengths of the large inland elevator is its ability to blend grain to improve the grade and enhance the value of the grain. Since these large elevators draw from a large catchment area and have significant storage capacity, they are able to take advantage of blending opportunities that are more limited at the smaller country elevator.

Blending is a factor that allows large elevators to attract farmers' business. By blending, elevators can sometimes offer farmers a better grade than their grain would otherwise achieve.

The steering committee realized that the Project concept requires knowing the blending potential of grain before it is pulled from the grain bin. Knowing the specific characteristics of the available grain would allow a calculation of blending value before the grain is called for delivery to rail.

One of the most complex and interesting activities undertaken by the Project was to develop a computer program that could be used to determine how to optimize the value of the grain committed to Farmco. Working with the Canadian Wheat Board, and in partnership with Vemax Management of Saskatoon, the Project developed a grain blending software program. Using this program, one can enter the characteristics of a large number of grain samples into a computer database, enter the current prices for that grain and then determine how to blend that grain to achieve the optimum value.

This software is owned by Vemax Management, the Saskatchewan Grain Car Corporation, the Canadian Wheat Board and West Central Road and Rail Ltd. The marketing of the software is under the control of these co-owners. The conditions under which the software will be made available have yet to be finalized by the owning bodies. The intent is that it will be made available for purchase to community based groups wishing to use it to improve returns to farmers.

When the Project determined it was going to proceed with the development of the grain blending software, it undertook an activity designed to facilitate the testing and development of the software, and to determine the potential returns that could be derived from blending grain.

6.2 Collection and Analysis study

The Collection and Analysis study was intended primarily to examine the benefits which could accrue from blending and to provide data for testing the grain blending software, but it yielded several other interesting results.

The first step in the study was to secure samples of grain harvested in the fall of 1999. Some 100 farmers from the West Central and Golden Prairie/Fox Valley areas of Saskatchewan were invited to submit representative samples of their wheat and durum. In total, about 650 samples were obtained.

These samples were sent to the Canadian Grain Commission (CGC) office in Thunder Bay for grading and analysis. The CGC agreed to provide an analysis that was much more comprehensive than the usual grade, dockage and protein. In addition to these standard factors, the CGC provided numerical assessments of test weight and a host of degrading factors that are found in the CGC's Official Grain Grading Guide.

Farmers who provided these samples were instructed to market their grain in whatever manner they chose, to achieve the maximum possible returns.

6.2.1 Software testing

The resulting sample data was used to test the grain blending software. The results indicate the potential gain in value that could be achieved in an ideal situation from blending the grain to optimize value.

For spring wheat, this gain in value was determined to be about $2.04 per tonne, compared to the value of that grain at the grade given it by the Canadian Grain Commission.

For durum, the increase in value was determined to be about $8.39 per tonne. It should be noted that, in arriving at these numbers in the case of durum, the grade loss associated with frosted and green kernels was not dealt with as this could not be modeled with the computer program. With these factors included, one could reasonably expect the increase in value for durum to be less.

The Executive Summary of the grain blending exercise is attached as **Appendix Three.**

6.2.2 Other Results from the Collection and Analysis study

The Collection and Analysis Study yielded other significant information.

When farmers had finished marketing the grain that was sampled at the beginning of the project, the results of their efforts to sell that grain were collected and analyzed. The volume of grain involved in this aspect of the study was slightly more than 21,500 tonnes.

Farmers who took part in this study marketed their grain in the way they believed would provide them with the greatest returns. Farmers who took part in this study were generally quite familiar with the producer car concept and aware of the advantages that could be obtained with producer cars. It should be noted that in the year this data was collected, the 1999/2000 crop year, there was significant frost damage to the crops and difficult harvest conditions in the west-central area. The result was that a significant amount of the durum fell into the lower grades, as did a lesser, but still significant amount of the red spring wheat. Crops in the Golden Prairie/Fox Valley areas were of better quality.

6.2.3 Producer cars and elevators

When the data farmers returned was examined, it was determined that **38%** of the grain had been marketed through producer cars and **62%** had been marketed through inland terminals and local elevators. Much of the latter occurred because farmers felt they would achieve greater overall returns by taking the deals offered by the grain companies than by loading producer cars.

The Project calculated the net return to farmers from the marketing of all their grain. **This calculation was comprehensive, including trucking costs, elevation, cleaning, trucking incentives at inland terminals and any other benefits the farmer might have achieved by his chosen marketing method.**

The value the farmer actually achieved was compared to the value he might have achieved if he had sold his grain in a producer car at the grade, dockage and protein levels assigned to it by the CGC.

6.2.4 Results

This calculation yielded a surprising result. ***Of the grain which was marketed through country elevators and HTEs, 68% would have brought a greater net return to the farmer if he had ignored the deal offered by the grain company and simply loaded his grain into producer cars at the closest producer car loading site.***

For those who shipped their grain by producer car, only **8%** would have been better off to haul to an elevator.

6.2.5 CGC analysis

The study also yielded some evidence about the usefulness of submitting samples to the CGC for analysis for those who wish to ship producer cars. Based on the Project's original CGC sample results, **79%** of those participants who shipped their grain in producer cars saw no change in grade at unload, **14%** saw a grade increase and **7%** saw a grade decrease. This should provide a measure of comfort to those who wish to reduce the risk of shipping by producer car. According to the results of this study, **93%** of farmers would have done as well as, or better than, the CGC's prediction of grade from the sample provided.

For those who hauled to elevators and HTEs, **60%** of these participants saw no change in grade from the grade the CGC assigned to their samples, **33%** saw a grade increase and **7%** saw a grade decrease at the elevator.

The 60% who saw no change in grade generally would have benefited from putting this grain in producer cars, since going to the elevator or HTE did not give them a better grade, and they had to pay the handling charge.

The 33% who saw a grade increase might or might not have been better off to go to the elevator. That would depend on the price spread between the grade assigned by the CGC and the higher grade they got at the elevator.

6.2.6 Producer cars increase returns

If all farmers who forwarded sales information had shipped their grain via producer car, on average they would have been better off by **$6.71/tonne**. Considering the variance in quality that year, in conjunction with blending "deals" that were gained from terminals, this is an impressive potential gain overall.

If all farmers who returned their sales results to the Project had sold their grain in producer cars, **the total net gain to the group would have been $145,000 more than was realized.** Extrapolated to the approximately 700,000 tonnes of CWB grains grown in the west-central region, shipping all of it in producer cars would potentially yield an increase in revenue of $4,849,000.

There would also be significant savings to the road system since grain loaded to producer cars is generally trucked a shorter distance and usually on municipal roads rather than thin membrane pavements.

6.2.7 Better options for farmers

It is clear that farmers who took part in this study were, in many cases, mistaken when they decided the best option for them was to ship through an elevator or a HTE. It is possible that this error occurs because farmers are fixated on grade, rather than calculating the net return from a specific marketing choice. Even if an elevator offers a grade higher than that which the CGC will assign to a producer car at port, the net return to the farmer is not always greater.

The returns from producer cars regularly exceed $10 per tonne more than marketing through an elevator or HTE, and the price spread between two grades of wheat may in many cases be less than that. Thus the farmer who gains a grade because of the blending available at an elevator may still have a lower net return than if he takes one grade lower in a producer car.

It is also possible that some farmers participating in the study were not aware of the monetary

advantages of loading producer cars or simply did not perceive producer cars as an option for them. This is consistent with the findings of the attitudinal study which the Project carried out.

The letter sent to producers who participated in the study is attached as **Appendix Four**.

7.0 Better Information Increases Returns

Another aspect of the Project was to examine whether farmers' lack of knowledge about certain marketing practices might result in less than optimum returns. The Collection and Analysis study showed that farmers are often not making the best marketing choices, and this may be linked to a lack of information about the grain they are selling. Two areas where farmers might be receiving less for their grain than they should involve protein and dockage.

7.1 Protein

One member of the Project steering committee undertook a series of experiments aimed at determining whether farmers are obtaining the full value of the protein in the wheat and durum they ship. Twenty-two samples from the 1999 harvest were sent to the CGC for protein testing. These samples were then taken to several local elevators and HTEs in the surrounding area.

The study showed that 95 per cent of the time, the elevators and HTEs found less protein in the samples than did the CGC. The average protein at the elevators/HTEs was 0.34% lower than at the CGC.

This experiment was repeated again with samples from the 2000 harvest. The result this time was that the grain companies' assessment of protein averaged 0.29% lower than the CGC readings. The odds that this could occur randomly are extremely low.

Based on the final payments for wheat and durum from the 1999/2000 crop year, one tenth of one per cent protein was worth from 60 cents to $1.50 per tonne. It is clear that an average protein loss of three tenths of a per cent would cost the farmer $1.80 to $4.50 per tonne.

This evidence coincides with the anecdotal experience of producer car shippers in other areas. In the view of the consultant, it appears that the grain companies are very cautious in their assessment of protein. When producer cars are loaded and shipped directly to port, the Canadian Grain Commission determines the protein level. The accuracy of these protein measurements should provide farmers with additional revenue beyond that which grain companies typically pay.

7.2 Dockage

An examination of the dockage levels in grain involved in the Collection and Analysis study found the average dockage in grain shipped in producer cars was 0.8 percent. By contrast, grain in the study that was marketed through elevators/HTEs had an average dockage level of 1.5 per cent.

These results are consistent with an examination of the dockage levels in a group of 1,365 producer cars, over a three-year period, which yielded an average dockage of about 1%. The average dockage which farmers have assessed against them at elevators/HTEs is generally in excess of this. This would indicate that, as with protein, farmers may benefit from the CGC's determination of dockage at port.

The examination of this group of 1,365 producer cars also found that just over 8% of the producer cars received a CGC rating of zero dockage at unload. This results in a saving of the terminal cleaning charge which averages around $3.50 per tonne. As well, the farmer is paid for 100% of the grain shipped. It would be very unusual for a farmer to receive zero dockage at an inland elevator/HTE.

This points out again that farmers are giving up money in the system because they lack adequate information about the products they have to sell. The Farmco concept relies on complete and accurate information, and uses this information to benefit farmers.

8.0 Port Handling

One aspect of an efficient logistics system is that it minimizes handling of grain wherever possible. The objective is also to provide the right kind of grain, at the right time, to the right location. The ideal situation would be to load agricultural commodities directly to ships through facilities with minimal storage. Eliminating the storage component could bring significant savings.

The aspect of direct loading implies that several factors must come together in the correct sequence. Railcar arrivals at port must coincide with vessel arrivals and vessel loading capacity.

Other factors that impact on the cost of handling grain at port relate to handling through conventional terminals. The speed at which a terminal can process railcars through its unloading facility is an important factor in cost. This is impacted by the way cars arrive in the train. Handling a single grade of grain is more efficient than the sorting that is required when trains carry different grades and types of grain.

In order to assess the potential for savings from improving the logistics of moving grain to and through ports, the Project engaged the services of Travacon Research Ltd. to study the impact of various potential Farmco grain-shipping options on grain terminal operations at Vancouver.

This report is attached as **Appendix Five**.

8.1 Advance information

One of the questions explored with port terminals was the potential for savings in terminal handling costs if terminals had more detailed advance information about the grain in each car of an arriving train than they currently receive. While grain companies were largely unwilling to quantify the benefits from improved information, they indicated that it would enhance their ability to plan for efficient terminal operations.

If this is so, there is potential for a Farmco to explore this with the grain companies and to share any savings that may accrue from better information flows.

Another question that was explored is whether there are benefits obtainable if arriving trains consist of one type of grain within a narrow range of grades or a single grade.

Terminal operators generally acknowledged that this would produce handling efficiencies with respect to unloading speed and bin utilization. These benefits would come largely from the reduced need for switching to remove cars from the train that should not be unloaded at that time or at that terminal. For the terminals which use their own switch engines to sort cars prior to unloading, such benefits would be attainable only if a sufficient portion of their overall throughput was presented in this manner, and this allowed them to reduce their use of local switchers.

8.2 Composite grading

A third question concerned the issue of composite grading. In this scenario, grain could be loaded to railcars with the intention that this grain be blended at port to achieve the desired grade. This is called composite grading, and would be contingent on a terminal being able to achieve on load out the grade that the grain was graded at when it was taken in.

The advantage of composite grading is that it would be possible to draw grain from a larger geographical area than could reasonably be achieved by trucking to a single inland terminal, and to do this at a lower cost. This larger catchment area would engender greater possible blending opportunities. It would allow Farmco to ship using the producer car concept and achieve blends without blending the cars themselves.

The Project had discussions with several port terminals about the potential for composite grading and there is some interest in this from several terminals. Independent grain terminals seem to be more interested in this concept than those owned by the grain companies.

Composite grading would also produce some efficiencies in the grading process as only one sample would be graded, rather than a sample from each rail car.

9.0 Sampling

A modern logistics system relies on accurate information to replace physical processes that are more costly. The Farmco concept is no exception. The starting point for the movement of grain is the grain itself. Operating within the Farmco concept requires having precise information about the grain Farmco is going to market. This is needed to obtain the specific delivery contracts with the Canadian Wheat Board, it is needed to determine how to blend that grain to optimize the value, and it is needed to know precisely which grain to call forward to trackside to meet the commitments at port.

In order to determine the quality of the grain Farmco will market, accurate samples of that grain must be taken. These samples, when analyzed to ascertain their specific qualities, must accurately represent the grain in the bin. If this starting point in the process is not done with great care, the entire logistics chain is put in peril.

Most farmers are aware of the value of having accurate samples when they are making decisions about how to sell their grain. Most also believe they take accurate samples. However, there is reason to believe this is not always so. ***The techniques and equipment most farmers use to obtain samples do not yield results that are satisfactory.***

9.1 Accuracy of samples

In order to assess the accuracy of sampling as done by farmers, the Project carried out a study. Farmers loading producer cars were asked to collect representative samples of the grain as they were filling the car. These samples were then sent to the CGC for an assessment of grade, dockage, protein and hard vitreous kernels (HVK). By comparing the CGC analysis of the sample taken with the results from the CGC grading the producer car at unload, it was possible to make an assessment of the accuracy of the samples that were obtained.

The data from this study is included as **Appendix Six**.

9.2 Sampling protocol

Given the importance of collecting accurate samples, the Project developed a sampling protocol which, if followed accurately, will produce representative samples. This protocol, and instructions for making a simple but effective sampling tool, are attached as **Appendix Seven**.

The Project also conducted some experiments using the sampling tool described in the protocol. The tool appears to perform reasonably well, which is also confirmed by the testing conducted by North Dakota State University, where the sampler was developed. The North Dakota State University concluded that, properly used, this sampler can provide samples that are as accurate as can be obtained by non-mechanical means.

It is crucial that farm groups who wish to implement the Farmco concept understand the importance of accurate sampling. If sufficient emphasis is not put on obtaining accurate samples, blending results will not be satisfactory, nor will it be

possible to eliminate the need for on-track storage, since it will be necessary to pull the grain in ahead of time to ensure it meets the quality specifications required. Knowledge of the grain that is available, which then allows great certainty about the characteristics of the grain loaded in each rail car, can reduce the need for rail switching, can make direct hit loading to ships possible, and can eliminate storage costs at port.

10.0 Farmco In Operation

The description of Farmco that follows is intended as a general guideline for the way the Project envisions the concept functioning. Farmco might consist of a group of 10 farmers who choose to work together to market their grain, or it might be a group of 2,000 farmers who choose to do this. The levels of organization and staffing required to run the different Farmcos would obviously be very different.

The description below, then, should be taken as a guideline that will need to be tailored to suit the individual circumstances of the situation and the people involved.

10.1 Corporate structure

Farmco is a group of farmers who willingly decide to market their grain jointly in order to obtain greater benefits than they can by marketing it as individuals. In this regard, Farmco functions as a corporate or co-operative farm.

There are several possible corporate structures that might be suited to this type of operation. Two options for this, a new generation co-operative and a business corporation, are outlined in **Appendix Eight.**

While several corporate structures are possible, the functioning of the organization should not be affected greatly by the type of structure chosen.

10.2 Operating structure

Farmco could be structured as "one big farm". That farm would have a single permit book, with Farmco and the individual farmers each having an individual CWB ID number. In this aspect, Farmco would function much like a corporate or co-operative farm. It would be a group of farmers who decide to collectively market their grain under one name, and who decide on a mechanism to split the proceeds of their endeavors. Producers could also obtain a permit book in their own names if they wanted to market some of their grain outside Farmco.

The joint entity, Farmco, would contract with the Canadian Wheat Board to deliver grain to the CWB.

10.3 Staffing requirements

The producer car survey indicated that many farmers felt they might use producer cars if they were better informed about all aspects of producer car shipping. The Farmco concept is one that will be unfamiliar to most farmers. This will perhaps be the biggest barrier to its widespread acceptance. Given this, it is anticipated that in the establishment phase of Farmco, significant effort will have to be put into explaining the concept to farmers and showing them the potential benefits. To achieve this, Farmco will have to hire marketing staff to make personal contact with each farmer. The role of the staff will be to explain the concept, solicit farmers' participation and secure the signing of contracts.

Depending on the size of the Farmco operation, Farmco would likely require a general manager, an office staff of several people who would deal with the CWB and railway for car orders, etc, and a group of field staff who would do some objective analyses of samples. (See section 10.7) Staff would also oversee the functioning of facilities, organize trucking and supervise car loading where necessary. Some staff would have overlapping functions.

10.4 Contracts with farmers

Farmco would hold meetings in spring after seeding, or in summer, to gather a list of potential participants. Farmers who are *potential* participants would agree to provide samples of their grain. They might also choose at this point to sign a contract with Farmco. The form of such a contract is contained in **Appendix Nine.** This contract would outline the obligations and responsibilities of Farmco and the farmer. In this initial contract, the farmer would only be committing to provide samples of his grain to Farmco.

The contract in Appendix Nine outlines the operating procedures that govern the relationship between Farmco and the farmer. These are found in Schedule A to the contract.

The contract also contains a Schedule B, which is a commitment on behalf of the farmer to allocate certain amounts of grain to Farmco. It is anticipated that a farmer would not be in a position to sign a commitment until after his grain was harvested.

10.5 Sampling

The importance of obtaining accurate, representative samples of each potential participant's grain cannot be overstated. In the sample contract provided in Appendix Nine, the farmer agrees that he will use a specific sampling technique agreeable to Farmco to obtain representative samples of his grain. This sampling technique is attached to the contract, and in the sample contract is the technique developed by the Project.

Farmco may choose to provide farmers with a sampling device such the one described in Appendix Seven.

Farmco could also provide sample bags to farmers. These bags would have a place for filling in the location of the bin, the bin identification number, the type and quantity of grain it contains, and other

pertinent information. They would also preserve the moisture in the sample to ensure accurate measurement.

10.6 Sample collection

Farmco would hire "collectors" who would gather the samples each farmer had taken as soon as harvest was over or sooner if that was feasible and practical. In a drawn-out harvest, it would be advisable to gather samples as they are available.

Farmers who agree to participate in providing samples would give the land locations of each of their grain bins. Each bin would also be given a unique identification number. With this information, if samples were left inside the door of the grain bin, Farmco could collect the samples during harvest and the farmer would not have to be concerned with this. Farmers would divide the sample and keep one portion for themselves.

10.7 Sample analysis

A Farmco of sufficient size would purchase equipment to perform objective tests on the grain samples collected. These would include moisture, protein, dockage and test weight. Other numerical, but more subjective tests, such as hard vitreous kernel count (HVK), midge damage count, fusarium, etc. would be done by someone with special training in such analysis.

It is important that Farmco achieve a rapid analysis of the samples collected. This is because Farmco needs to input that sample analysis into the computer database to determine blending potential and because expected returns to farmers will be determined by the analysis of the quality of the grain.

The Canadian Grain Commission provides such analysis, but there may be issues of timeliness during the fall season when Commission staff have a large number of samples to deal with. By doing the objective analysis described above, Farmco will likely be able to achieve a lower cost than can otherwise be obtained, and it will reduce the time required for an agency like the CGC to complete the remaining analysis.

There are also some private companies that do analysis like that done by the CGC, and Farmco could obtain competitive bids on such work.

10.8 Computer analysis

The data from the analysis of the grain samples provided by farmers would be entered into the database of the computer blending program. This program enables Farmco to determine the maximum value it could get from blending the grain in the database to increase total value.

The grain could be analyzed in two ways. The program could determine the maximum value a farmer could get from blending his own grain. Then, after the total sample collection and analysis was done, the computer program would determine the optimum that could be achieved by marketing all the grain through Farmco. The logical price assumptions to use for CWB grains would be the midpoint of the current Pool Return Outlook (PRO).

The values determined by the program would be important marketing tools, which would be used to persuade farmers of the benefits of joining Farmco. This could be done as outlined below.

10.9 Providing options for farmers

The farmer would be presented with three scenarios: 1) the value of his grain at the assigned grade (using PRO midpoints) and delivered to his chosen delivery point, 2) the value of his grain if he blended it to the optimum on his own farm, again delivered to his chosen delivery point, and 3) the potential value of his grain if it were committed to Farmco.

A delivery point of the farmer's choosing would be assigned to the grain to provide a base for calculating his freight, elevation, cleaning, trucking costs and trucking incentives, if any. In calculating the rail freight and trucking costs for Farmco, the siding which would be used by Farmco to load the grain would be used as the delivery point. Farmco charges for handling would be calculated as in 10.10 below.

The farmer would be able to compare these values to anything offered him at an elevator or HTE. By providing this information, Farmco will enable the farmer to understand the true cost and benefit of whichever option he chooses.

10.10 Farmco cost of operation

Based on assumptions about the participation in Farmco for the year, Farmco would decide on its annual cost of operation, on a per tonne basis, and would set a fee based on that projected cost. The cost would include amounts to finance capital construction and purchases.

The Grain Collection Alternatives Pilot Project commissioned the development of a sample business plan that outlines in a theoretical manner the financial potential of the Farmco concept. It does not describe an actual situation but reflects what the steering committee believes is possible for an operation of the size described. It is attached as **Appendix Ten.**

10.11 Signing commitments

If a farmer chooses to commit his grain to Farmco, he would sign the commitment, which is Schedule B of the contract that is attached as Appendix Nine. Schedule B, the "commitment form" outlines the grades of each bin of grain and the financial guarantee that Farmco makes to the farmer.

Although there are many options here, it is suggested that the Farmco guarantee to the farmer be based on the value that could be achieved by blending the farmer's grain with itself, shipped through Farmco. Farmco's fees will be substantially lower than those of a terminal, and the return the farmer can realize should be sufficient to convince him to commit to Farmco.

In addition, Farmco would return to farmers any additional benefits obtained from railway incentives, terminal rebates and similar measures. The farmer's share of this would be based on the tonnage committed.

The commitment also specifies that the farmer is responsible to deliver to Farmco grain that is consistent with the samples provided by the farmer. The guarantee that Farmco makes to the farmer is based on these samples, and the grain must match the samples. This gives the farmer a strong incentive to ensure that he takes good, representative samples.

10.12 Deadline for commitments

It is important that Farmco have a deadline for commitments. Farmco must sign an "A" contract with the CWB before October 31 of the crop year, and Farmco must know what grain is committed to it long enough before this date to be able to determine the blending it can do in order to contract the correct grain with the CWB.

Farmco also will organize deliveries with the CWB and the railways so as to optimize efficiency in the system. For example, Farmco might choose to concentrate deliveries in one area in order to meet train run minimums. Therefore, it is important to know the volumes and types of grain that will be shipped.

Farmers wishing to contract after the deadline might be accommodated, though this is not a preferred option. Their returns might need to be adjusted to account for the lessened ability to optimize value for the whole amount of grain.

The exception to this could be feed quality grain such as feed wheat and Number 5 durum. These have very limited blending potential. If it were determined that there was no blending potential with these grains, farmers might be reluctant to take CWB contracts because of the possibility of better prices on the open market. They might be reluctant to commit these grains to Farmco at the beginning of the year because they would want to preserve their option for selling. Farmco's contract would be binding, and farmers who signed up would not be able to withdraw that grain.

For these feed quality grains, since there is no blending potential, Farmco might want to adjust its policy of not allowing entry to the "pool" after the initial sign-up deadline. Farmers who decided to sell their grain through the Board after watching open market prices would in that way be able to sign up later and take advantage of the opportunities offered by Farmco.

10.13 Contracting with the CWB and organizing railcar movements

Farmco would contract with the CWB for the type and amount of grain which it expected to deliver, based on all the contracts signed and the blending potential. Farmco would work closely with the CWB to organize and co-ordinate deliveries. The CWB would call grain forward for delivery under the contracting system.

10.13.1 Current allocation system

The following paragraphs describe, very briefly, the way the CWB co-ordinates and plans grain movement. It is followed by a discussion of how Farmco might "fit into" the allocation process.

The CWB uses the initial volume forecasts, based on data gathered from area reps, grain companies and contracts, to set its year-long shipping pattern – in the sense that when it knows the volumes it wishes to ship, it knows how many cars it needs to allocate, and from this approximately how many trains it will need to move from the various train runs.

The more detailed level is that of the four-week shipping plan by corridor. Grain companies are told the grade patterns that the Board expects to move. This is so they can work to bring the right grain into their facilities.

In terms of week-to-week allocation, the normal pattern is that the railways inform the CWB of car supply on Thursday. By Friday morning, the grain companies report shippable stocks to the Board. By Friday evening, the Board puts out the allocation by zone. Monday, Tuesday, and Wednesday, the grain companies negotiate train run service with the railways. Any changes to the CWB program must be approved by the CWB and the CWB must sign off on the allocation before it is finalized on Wednesday. On Thursday, the railways inform the grain companies of the movement for the upcoming week. Trains may move as early as the weekend. Shortfall cars move to the top of the spotting list for the following week.

Currently, producer cars fit in as follows: The formula for producer cars allows 5% of total cars to go to producer cars. The CWB communicates with the producer car officer at the CGC about the number of grain cars available for the week for producer cars and the grade pattern for movement to the various ports. The producer car orders act like the grain companies' report of shippable stocks. The producer car officer allocates the cars and negotiates train service with the railways much like a grain company does.

(The CWB can exceed and has exceeded the 5% limit in the case of unit trains.)

Following allocation is the execution of the orders. The railways inform the grain companies about the timing of trains. Once cars are loaded, grain companies release the cars to the railways and report the shipment to the CWB. If there are producer cars, the producer informs the CGC when the car is loaded and the CGC conveys this information to the CWB.

10.13.2 How Farmco might fit into this process

After Farmco receives its grain samples and they are analyzed, it will communicate with the CWB the volume and amount of grain it proposes to ship under the "A" contract and the initial acreage based quotas. The stocks reported would reflect the blending Farmco intends to carry out. For best planning, it is important to sign up as much as possible on the "A" contract.

(Farmco could offer the CWB an initial assessment of shippable stocks before the detailed analysis is done, if the grade pattern was relatively straightforward. This would facilitate some early movements.)

At this point in the planning process, the CWB does not require further information beyond grade and protein content of shippable stocks. With this information, the CWB can begin to give Farmco some idea of the time frames within which it would expect to issue contract calls.

With Farmco, the producer car officer may not need to be involved as much as is the case now. Negotiation with the railways, for example, could be done by the CWB.

It's important to the CWB to get the information about the cars when they are loaded. Currently this information would go back to the CGC, but it would make sense for Farmco to communicate it directly to the CWB. This is not a complex issue, but the communication process should be spelled out specifically. Again, the producer car officer would not have to be directly involved with the unload information.

August/September/October

- Farmco collects grain samples from farmers.
- Farmco does initial rough analysis of samples to determine approximate grade pattern.
- Thorough analysis of samples done as rapidly as possible.
- Farmco decides if it wishes to move some grain immediately under acreage-based contracts, based on estimates of blending potential. (This could be done before thorough analysis if farmers are willing to commit at this stage, or shortly after if the analysis is done quickly enough.)
- Farmco discusses expected volumes with CWB. Anticipated railcar numbers and rough idea of timing of contract calls are laid out.
- Board discusses train run needs for the year with the railways. Farmco is involved in these discussions.
- Farmco signs "A" contract with CWB.

September/October

- Farmco provides CWB with detailed information about grain on contract.
- Discussions with the Board take on more detail as the Board roughs out its shipping plan for the year. Discussions center on expected volumes to move throughout the year and the timing of that movement. Prerequisite to this, Farmco discusses and arranges with farmers the logistics of movement from farm bin to rail siding.
- Discussions with the CWB as to the desired configuration of train runs. Farmco lays out parameters for movement in order to maximize Farmco's returns. For example, how much, in what size of blocks, where, etc. Farmco decides these parameters based on discussions with the railways.

- Farmco informs Board of grain it wishes to move under **acreage-based contracts**. Car orders are placed with the CGC.

Late September, October, and onward

- Discussions between CWB and Farmco over 4-week plan. Based on projections for movement in that time period. Farmco tells the CWB what it has available to ship. These discussions occur weekly.
- Farmco places car orders through the CGC.
- These orders become part of the weekly car award process. Orders are organized by Farmco to take the best advantage of logistics and multiple car blocks.
- CWB negotiates car orders with the railway on behalf of Farmco. Any shortfalls are organized so that they minimize logistical problems.
- CWB informs Farmco of orders for the different train runs.
- Orders are executed and cars loaded.
- Farmco transmits information about loaded cars to the CWB.

Remainder of crop year

- Weekly discussions between Farmco and the CWB to ensure ongoing flow of information.
- Farmco goes through a specific contact person at the Board for planning grain movement. Train run organization is done through the Board. The same person who plans the grain movement could also perform this duty. There is consistency in the contact people to ensure a smooth working relationship.
- CWB can use detailed information available to it to call specific grain to meet special demands.
- CWB informs Farmco of possible mill shipments and any tenders that might be available on these. (This presumes that Farmco can supply clean grain to the correct specifications.)
- Farmco puts in additional contracts as required throughout the year.

10.14 Farmer deliveries

When opportunities for delivery of grain arise, for example when a contract call opens, Farmco will implement its delivery plan. When railcars are ordered and the orders are confirmed, Farmco will notify those farmers whose grain it wishes to ship. Farmco will determine this based on blending opportunities, train run factors, etc.

In the commitment (Schedule B to the contract), the farmer has the opportunity to designate the method of delivery of his grain. He may choose to deliver himself or use commercial truckers. The farmer is responsible for the cost of delivering to his closest rail siding. If Farmco requires that the grain be delivered to a siding other than the closest one, it will reimburse the farmer for the incremental distance based on the trucking schedule in the contract (Appendix 1 to Schedule B).

It is important that farmers deliver to Farmco at the time the grain is needed. If Farmco has facilities at trackside that can temporarily store grain, that would allow some leeway in terms of time of

delivery. However, storage carries a cost and should be minimized if possible. If producers could not deliver at the required time, and no alternates can be found, commercial trucking would be arranged by Farmco. The farmer would be responsible for the cost of this trucking to his closest rail siding.

Of course, this is only one possible way of organizing the trucking of farmers' grain. Each individual Farmco will choose the specific format it is comfortable with. For example, Farmco may wish to pay the farmers' total trucking costs as a marketing incentive. This would, of course, have to be taken from the revenues realized by Farmco.

10.15 Receiving grain at trackside

When a farmer delivers to trackside, or when delivery is made with a commercial truck, the grain would be sampled according to the accepted protocol. This sample would be analyzed to determine if it matches the sample provided by the farmer, which is the basis for the commitment.

This would require someone at trackside qualified to inspect the grain and judge the quality.

If that batch of grain is required for blending, it is very important that it match the sample. In the event that it does not, the farmer would be required to accept the value of the grain at the grade that is delivered. In the event of a dispute over the quality of the grain, the sample would be submitted to the CGC or a similar agency to determine the characteristics, or would be subjected to analysis of the objective factors, such as protein and test weight, by Farmco.

The farmer would receive a certificate of delivery specifying the amount and quality of the grain delivered.

If there are concerns about the condition of the grain, for example whether it might be infested with insects, it would be prudent for Farmco to call for or collect probed samples of the grain before delivery is taken.

10.16 Loading railcars

There is no one method of loading cars that should predominate in every Farmco operation. Some groups may choose to use on-track storage. In an ideal situation, farmers might be encouraged to move bins to trackside. This is likely to be more feasible on a short line than on the tracks of the major railways, since they tend to be less accommodating to the needs of producer car shippers.

Just-in-time delivery to trackside, with no storage facilities, is attractive because it results in the lowest possible costs. However, it also depends on timeliness of delivery. This may be a concern to some, and a combination of trackside storage and on-time delivery might suit some groups.

Blending of grain may also be facilitated by trackside storage, though it does not rely on this.

Some type of weighing device is necessary to facilitate blending and ensure cars are loaded to the correct weight.

Some groups are currently pursuing the purchase of abandoned wooden elevators. These may be useful for short-term storage and to facilitate blending and the loading of cars.

10.17 Cash flow

The contract between the farmer and Farmco also spells out the payment schedule, which is agreed on between Farmco and each farmer.

To accommodate the various circumstances, the contract between Farmco and each farmer might vary in regards to payment.

As a general rule, since Farmco, not the farmer, controls the timing of delivery, it is assumed that when Farmco has delivered and received payment for 20 per cent of a specific type of grain, that the farmers with that type of grain will have received 20 per cent of their total monies owing for that grain.

It is expected that Farmco would make regular payments to farmers throughout the crop year, and as adjustment payments are received. It must be remembered that Farmco is the primary producer in the permit book and orders and ships producer cars, so payments, including initial payments and initial payment increases, will come to Farmco.

10.18 Storage payments

As noted above, Farmco will determine the timing of deliveries from farms. Farmers are responsible for keeping the grain in condition and delivering to Farmco grain consistent with the samples provided.

Since Farmco controls the timing of delivery, some farmers may have to wait longer to deliver than others for reasons outlined above. Farmco would need to protect farmers to a certain extent from the risk of spoilage in storage. For this reason, the contract between Farmco and the farmer provides for storage payments to be made by Farmco to the farmer. It is anticipated such payments would be on an increasing scale, so that the longer a farmer must keep his grain and maintain its condition, the more he would be paid to do so.

10.19 Other opportunities

As noted in Section 13, Farmco would provide information to the CWB on the stocks it intends to deliver. Farmco potentially would work closely with the Board to examine other marketing possibilities that could increase returns from its grain, e.g. filling mill orders if grain of a sufficient type and quantity were available.

Farmco would seek to optimize its shipping to take advantage of incentive loadings where this is available and possible. For example, grain might be ordered for a specific location in blocks of 25 cars. As a single shipper, Farmco should be eligible for rail incentive rates.

10.20 Negotiations with railways

The CWB is responsible for negotiating car supply with the railways and ensuring car supply is available for producer cars. Farmco would be involved in these discussions. Farmco would also discuss with the railway methods to increase the efficiency of movement. It may be that sorting cars in a particular fashion, or organizing the train in a specific way, will allow the railway to do its job more efficiently.

These opportunities will need to be explored, and any savings that can be generated should be shared between the railway and Farmco.

10.21 Negotiations with terminals

The experience of West Central Road and Rail, the Great Western Railway and several producer car loading facilities indicate that grain companies with port terminals are willing to compete for producer car traffic. Under the present car allocation system, producer cars allow a grain company to handle grain through its terminal that is incremental to the grain it receives through the regular allocation process.

Farmco would negotiate handling arrangements with a terminal or terminals. This may be a different terminal at Vancouver than at Thunder Bay. It might also involve Churchill or other ports, e.g. in the US. The deal might not be for the entire crop year.

This negotiation can be expected to yield revenue to Farmco.

If terminals owned by the grain companies are not willing to handle Farmco grain, there are independent terminals that will do so. The Project held discussions with several such terminals, and it is clear that there is a desire among these terminals to increase the amount of grain they move.

10.22 Licensing

Farmco, as described in this template, is a way for farmers to organize to increase the value of their grain by implementing modern logistics principles. Farmco takes on the role of a producer, ordering producer cars. The farmers who participate in this joint venture sign contracts committing their grain.

For the purpose of obtaining producer cars, Farmco becomes the primary producer. In this context, Farmco does not require a grain dealer's license from the CGC, since Farmco is a primary producer that signs contracts with the CWB and ships producer cars. Farmco is not buying grain from farmers. This should hold true as long as Farmco is moving grain directly from farmers' bins to railcars.

However, licensing issues are complex. If Farmco decides to build or utilize some trackside storage, as surely it will in some locations, then such facilities fall under the legislative framework of the *Canada Grain Act* and must either be licensed or exempted from licensing.

It is not possible to give a definitive answer to the question of licensing that will hold true for all situations and in all locations. The Canadian Grain Commission deals with exemptions and licensing on a case-by-case basis.

11.0 Barriers to Success

The Farmco concept has the potential to return significantly more money to farmers' pockets than the current elevator/HTE system that the grain companies have created. This should give it a high probability of success.

Nevertheless, it is possible there will be significant obstacles placed in the path of any Farmco that might be set up.

11.1 Access to sidings

Currently, many farmers who wish to gain access to rail sidings to load producer cars are unable to do so because the railway refuses to spot cars at the particular siding. Both railways have restricted the number of sidings at which they will spot producer cars.

CN has continued to claim the right to control car spots on short line railways which it has sold or leased to short line operators. This has affected producer car shippers on short lines from Manitoba to Alberta. Despite the willingness of short line operators to spot greater numbers of cars on sidings. CN has, at times, refused to supply the cars. CP has not attempted to restrict short line operators in the way they serve their customers.

Lease rates are often very high, and these pose an additional barrier to farmers wishing to obtain leases on sidings to load producer cars. These rates are in excess of the leases charged to similar commercial customers.

Possible remedies

Producer car shippers who organize under Farmco might find that the greater leverage given them by their involvement in a larger endeavor makes negotiations with the major railway easier.

It may be too that producer car shippers who are unable to obtain adequate service and access to sidings could launch a complaint to the Canada Transportation Agency. The Agency has lately not appeared to be too sympathetic to such appeals, so that route should be taken carefully and with proper assistance.

11.2 Railways may refuse incentive rates

If Farmco is established over the length of a branch line, it may wish to gain some benefit from loading unit trains that are assembled from more than one location. Currently, such movements do not fit the railways' requirements for a multiple car incentive.

If such trains actually represent a more efficient movement than reflected in the single car tariff. Farmco should expect to receive some benefit from this and should negotiate with the railways for this. However, the railways may refuse to negotiate such benefit sharing.

Possible remedies

Farmco may find it necessary to use the Final Offer Arbitration mechanism in the *Canada Transportation Act* to force the railways to acknowledge the efficiencies it creates.

11.3 Reducing the role of the CWB

The CWB is currently under much pressure. The grain companies have steadfastly declared that the CWB should be stripped of its role in car allocation for CWB grains and should be consigned to the role of port tendering for grain movements.

Currently, the CWB negotiates with the railways for car supply and ensures that producer car shippers are able to access cars. If the role of CWB is diminished, it may make the producer car concept unusable. While it may be possible for Farmco to function without the CWB in this role, it would certainly be much more difficult. The structure of Farmco would have to be altered, and Farmco would have to compete against the grain companies for rail cars.

Conversely, the CWB is also receiving pressure from some producer organizations to increase its role in the supply and administration of producer cars.

Possible remedies

If the CWB takes on a greater involvement with producer cars and with producers in general, it may increase support for its role in transportation and car allocation.

11.4 Grain companies will fight to retain volumes

Farmco has the potential to capture substantial amounts of grain, since it can offer significantly higher returns to farmers. If significant volumes of grain move through Farmco-style operations, the grain companies will find their handlings reduced accordingly. They will find it necessary to compete with Farmco on all levels.

For decades, farmers have relied on their local elevator agent as a source of information about everything from agronomics to farm politics. The survey of producers which the Project carried out

shows that producers often have misconceptions about the benefits of, and problems with, loading producer cars. Some of this misinformation has come from elevator agents.

As a competitor, one would expect grain companies to extol the virtues of their services at the expense of the Farmco concept. This is not unusual nor should it be unexpected. It is possible grain companies will use the influence they have in communities to attempt to discredit the Farmco concept.

Possible remedies

As the grain companies close most of the country elevators, their influence in the community diminishes somewhat. There is also a backlash against some companies in the wake of elevator closures.

Perhaps most importantly, the record of Farmco should be its biggest selling tool. It is already possible to show, from the experience of other producer car shippers, that producer cars achieve lower dockage and higher protein. The financial benefits of this alone are very significant. Farmco will need to put a major effort into informing its communities of the benefits it offers.

It would also be of significant benefit if the CWB and provincial and federal governments would give wholehearted support to the concept.

11.5 Farmers may not participate in sufficient numbers

The ultimate failure of Farmco would be if farmers do not utilize the concept in sufficient numbers. The steering committee of the Project believes that the concept envisioned in Farmco will return significant dollars to farmers' pockets. But farmers are reluctant to make changes, and are often poorly informed about alternatives. The failure to utilize Farmco would be a failure to communicate the benefits properly.

Also, nothing succeeds like success, so the success of groups that take on the job of initiating a Farmco will be the best advertising Farmco can get. It will be important to communicate these things effectively.

12.0 Economies of Scale

The greater volume that a Farmco can command, the more effective it will be at negotiating benefits for farmers. This is true in negotiating for terminal rebates, rail incentives, etc. So, while Farmco can exist between a handful of farmers, it will achieve greater benefits with greater participation.

With this in mind, it might be useful for Farmcos in different areas to engage in joint negotiations for such things as terminal handling agreements.

It might also be useful for different areas to join forces in a single Farmco, in order to reduce administration costs and achieve economies of scale. It should be noted that some farmers may find the notion of one large Farmco unappealing.

Regardless of the decision that is made regarding joining or working together for economic reasons, Farmcos from different areas should realize the benefits of a common organization to deal with political issues. There are many political issues specific to the existence of Farmco that will need to be addressed on an ongoing basis.

13.0 Further Work

One of the benefits to Farmco, and this is similar to an inland terminal, is that there is potentially a large catchment area that Farmco could draw from. This provides significant possibilities for blending because grain in one area might have different degrading factors than grain in another area.

For example, in 1999, large areas of west-central Saskatchewan were subject to frost that damaged ripening crops. However the Golden Prairie/Fox Valley area did not experience these problems and grain in that area was of higher quality. The potential for blending between the two areas, to upgrade some of the west-central grain, was significant.

However, the ability to blend is constrained by the physical distance between the different types of grain. There is no point in blending to achieve a gain of $5.00 per tonne if the trucking cost to achieve that is $6.00.

13.1 Composite grading

One potential solution to the constraints imposed by physical distances would be to load railcars at various points along a rail line with the correct mixture to achieve the desired grade when the cars are blended together. These cars could then be assembled into a train, taken to port, and blended together at port. The entire train would be given a single grade. This is called composite grading.

The benefit of moving grain in this fashion is that it allows for the blending of grain that it is otherwise not cost-effective to blend.

There are several obstacles to overcome in achieving this.

- Port terminals might impose a fairly significant charge to blend grain into a uniform lot.
- Railcars must generally arrive together to facilitate the process. Even though a train is assembled as a unit, it may, for operational reasons, be split up in transit and the parts arrive at port at different times.
- There is risk in sending a train in this fashion and finding that it fails to make the grade at the port. There could be significant financial losses. This could be mitigated to some extent if the train was graded inland.

The Project held discussions with Mission Terminal at Thunder Bay about the possibility of trying composite grading on an experimental basis. Mission Terminal expressed interest in this.

13.2 Quantifying loss of value through the commercial system.

Experiments conducted during the course of the Grain Collection Alternatives Pilot Project indicated that farmers moving grain through the commercial elevator system generally are assessed higher levels of dockage than is the case if that grain is shipped in producer cars and the dockage is assessed by the Canadian Grain Commission.

Similarly, evidence indicated that protein levels determined by the CGC for producer cars are often higher than those measured in the commercial grain handling system.

Further study in this area to conclusively quantify the loss of value to farmers would be useful in assisting farmers in realizing the value of their grain, and would aid in the marketing of the Farmco concept.

Appendix One

Grain Collection Alternatives Pilot Project

Report Regarding Producer Cars

An Attitudinal Study

March 20, 2001

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MAJOR OBSERVATIONS

- There is limited experience with producer cars in the area surveyed. Only 6 of 231 farmers regularly employ this option.

- The principal motive for employing producer cars lies in the savings. Concern for local handling/maintaining rail traffic is minimal.

- The perceptions that there is considerable "hassle" involved in the paperwork and that it is a system suited to larger operations are the major factors inhibiting farmers from ordering and loading producer cars. A general lack of familiarity with the process also appears to be a significant hindrance.

- Most producers recognize that there are savings in ordering and loading producer cars. Most believe these savings amount to between $500 and $1,000 per car.

- Proven savings of $1,000 per car would be sufficient to attract a large majority of producers if other concerns are addressed adequately.

- Concerns over their ability to meet restrictive deadlines (days, times) for loading are a significant concern for producers.

- While concerns over grading, risk factors, and delay in payment are present, these appear to be less important than other factors – time, hassles, volume and familiarity.

- Any successful template developed by the Pilot Project will need to offer:
  - organizational assistance with the paperwork, coordination and easing of time restrictions;
  - grading on/prior to loading; and,
  - the ability to weigh/access to scales.

  There will also need to be considerable effort undertaken to educate and inform area producers regarding the process.

1.0 I. INTRODUCTION

Decision Research Inc. was commissioned by the Grains Logistics Pilot Project to conduct a study of producer attitudes toward producer cars and toward the concepts involved in the template being developed by the organization. The objective of this study was to ensure that the final template would be designed to be acceptable to the largest number of producers possible.

The study took the form of a random sample telephone survey of producers. The sample consisted of 2,000 producers residing south of the CN Rosetown subdivision and north of the South Saskatchewan River covering Rural Municipalities # 225, #226, #228, #255-261, #285-286 and also included Rural Municipalities #167-169, #171, #229-232 and #141-142 south of the River.

Interviewing was conducted during the period of March 16 to March 22, 2001. A total of 231 useable interviews were completed. A copy of the questionnaire administered in the survey is attached. Appendix "A".

A set of the top line results is also attached. Appendix "B". A more complete set of data tables by key demographics has been forwarded to the Grain Logistics Pilot Project in electronic format.

A survey of this size sample will have a precision (range of error factor) of ± 5.2 percent at a 95 percent level of confidence (19 out of 20 times).

II. SAMPLE CHARACTERISTICS

Interviews were conducted with producers indicating they are the principal decision maker for matters concerning the marketing and delivery of grain sold for export.

Most of the producers fall into the age range of 36 to 54 years of age and have been farming for extensive periods of time.

AGE			
Under 35	–	14	(6.1%)
35 to 54	–	119	(51.5%)
55 to 69	–	65	(28.1%)
70 or Older	–	33	(14.3%)

YEARS FARMING			
Less than 10	–	7	(3.0%)
11 to 20	–	34	(14.7%)
20 to 30	–	86	(37.2%)
31 to 40	–	42	(18.2%)
41 years or More	–	61	(26.4%)

The largest group of those interviewed farm between 1,000 and 2,000 acres. Most had less than 1,000 acres dedicated to wheat, durum or barley for the 2000 crop year.

1.1.1 ACRES IN FARM OPERATION					
Acres in CWB Grains	**> 500**	**500 to 1,000**	**1,000 to 2,000**	**2,000 to 3,000**	**> 3,000**
< 500	29	32	11	1	1
500-800	1	12	42	2	–
800-1,200	3	2	25	11	1
1,200-1,500	–	–	3	7	6
1,500-2,000	–	–	4	6	12
2,000-3,000	–	–	–	3	8
> 3,000	–	–	–	–	4
Total Acreage Farmed	**33 (14.9%)**	**46 (20.2%)**	**85 (37.3%)**	**30 (13.6%)**	**32 (14.0%)**

The median net farm income among the sample was approximately $24,000 for the year 2000. While there was some correlation between net income and size of operation, a majority of those showing negative margins (14 of 25) were in the largest acreage categories, in excess of 2,000 acres.

NET FARM INCOME			
Negative Margin	–	25	(10.9%)
< $10,000	–	42	(18.2%)
$10,000 to $25,000	–	54	(23.4%)
$26,000 to $50,000	–	55	(23.8%)
$50,000 to $100,000	–	25	(10.9%)
$100,000 to $250,000	–	8	(3.5%)
Over $250,000	–	1	(0.4%)
Refused	–	17	(7.4%)

One out of five producers interviewed (20.1%) works off the farm.

Producers were also asked if they generally like to be the first one in their area to try a new technique or product or if they tend to be cautious about unproven methods, techniques or new products.

Only 46 respondents or 19.9 percent indicated they are "early adapters", those who like to venture first into new areas. There is only a slight tendency for these producers to be younger than their more cautious counterparts.

III. DELIVERIES

Producers were asked how far they were required to haul the majority of their grains during the past year and if this represented the nearest elevator point.

Over one-third of the sample are hauling distances in excess of 50 miles. A large percentage does not haul to the nearest elevator point.

DISTANCE GRAIN HAULED			
Under 10 Miles	–	34	(14.8%)
10 to 19 Miles	–	39	(17.0%)
20 to 29 Miles	–	26	(11.3%)
30 to 39 Miles	–	26	(11.3%)
40 to 49 Miles	–	22	(9.6%)
50 to 74 Miles	–	44	(19.1%)
75 to 100 Miles	–	16	(7.0%)
Over 100 Miles	–	23	(10.0%)

HAUL TO NEAREST POINT			
Yes	–	129	(55.8%)
No	–	101	(43.7%)

For two-thirds of those who do not haul to the nearest point, the difference exceeds 10 miles.

A majority of producers are using commercial truckers to haul their grains but most would choose to haul themselves if they were in a position to deliver locally.

GRAIN HAULING			
Commercial Trucker	–	129	(55.8%)
Self	–	66	(28.6%)
Both / Mixed	–	36	(15.6%)

IF LOCAL DELIVERY AVAILABLE			
Commercial Trucker	–	39	(29.8%)
Self	–	85	(64.9%)
Both / Mixed	–	7	(5.3%)

Most of the producers believe that the distance they will haul grain will stay the same over the next few years (71%) but there were 49 (21.2%) who feel it will increase and another 17 who were unsure. Most of those anticipating an increase are currently hauling shorter distances.

A majority of producers in the sample are delivering a majority of their grains to inland terminals.

DELIVERIES			
Inland Terminals	–	127	(55.5%)
Elevator Point	–	86	(37.6%)
Other	–	16	(7.0%)

Deliveries to elevator points tend to be shorter hauls and tend to be handled by the producer. Deliveries to inland terminals tend to be both larger and are more often handled by commercial truckers.

Producers were also asked what the distance would be from their farm to the nearest loading spot for producer cars. For four out of five producers, it is less than 20 miles away.

DISTANCE TO LOADING PRODUCER CARS			
Less than 10 Miles	–	115	(49.8%)
10 to 19 Miles	–	52	(22.5%)
20 to 29 Miles	–	21	(9.1%)
30 to 39 Miles	–	9	(3.9%)
40 Miles or More	–	14	(6.0%)
Don't Know/Not Sure	–	20	(8.7%)

IV. PRODUCER CAR EXPERIENCE

There were 39 individuals representing 17.2 percent of the sample who have ordered producer cars for the purpose of loading and shipping their own grain. Only six of those considered themselves regular users, 5 as "occasional" users and 27 seldom use this method.

Twelve of the 39 did not ship by producer car in 2000 and only 6 shipped more than half of their grain by this method.

Those who have used producer cars are larger operations on average but have lower than average net farm incomes.

1.1.2 PRODUCER CAR USERS					
Acreage Farmed			1.1.3 Net Farm Income		
> 3,000	–	10	Negative	–	8
2,000 to 3,000	–	6	<$10,000	–	4
1,000 to 2,000	–	12	$10 K to $25 K	–	11
500 to 1,000	–	7	$25 K to $50 K	–	5
< 500	–	4	Over $50 K	–	5
			Refused	–	5

Of those who have used producer cars, 36 percent consider themselves to be early adapters compared to only 17 percent of others. There were little differences in the incidence of off-farm work between users of producer cars and those who do not use cars.

Those who have used producer cars haul grain for shorter distances on average than do others. They also have a greater tendency to haul to the nearest elevator point and are much more likely to haul their grain themselves. Of these 39, 19 or 48.7 percent haul themselves compared to only 24.5% of other producers who haul themselves. Virtually all of these producers have a loading spot for producer cars within 20 miles of their farm.

Those who have used producer cars were asked if they anticipate their use will change over the next few years.

PRODUCER CAR USE			
Increase	–	12	(31.6%)
Stay the Same	–	17	(44.7%)
Decrease	–	3	(7.9%)
Don't Know/Not Sure	–	6	(15.8%)

They were also asked if there is a particular reason why they don't ship a higher percentage of their Board grains in this manner. Four indicated that paperwork and associated hassles were the main concern and another four expressed concern over grading. The other comments captured at this point were:

- a different crop rotation
- access site
- accessibility to the track
- assistance to blend grain
- can't get the service here
- can't send so many to direct ship
- car availability couldn't get trains down our line
- don't get paid right away
- had the local elevator
- have to haul 50 miles to cars
- inconvenience
- keeping elevator open is important
- like elevators to mix grain
- manpower
- mixture of grades
- no insurance
- no scale available
- not enough volume
- not familiar with process
- not handy to weighing
- quantity is limited
- still have local elevators
- too few cars

They were also asked if there is a particular reason, more than others, that they have chosen to use producer cars to handle grain shipments. Saving money is clearly the principal motivator.

REASONS TO USE PRODUCER CARS		
	1st Mention	2nd Mention
Save Money	17	7
Support Community	4	1
Better Grades	1	3
Convenience	–	2

The other reasons provided were:

- availability of the cars
- better rates for my barley
- collusion between grain companies and rails
- cost saving, only way to market crops
- had to sell off Board not CWB Grain
- handling charges high at elevators
- hate grain and railway companies
- hauling distance
- it went to the U.S. by rail
- railways don't treat farmers fairly
- shipped oats, that's the way I want it
- shipped rye to the States
- to ship rye when I couldn't use elevator

Previous users were also asked to indicate what they felt would be the one aspect of ordering and loading producer cars that could be improved or changed that would make this option more attractive to producers.

Five made reference to the "hassles" and there were three mentions of scales or weighing. There were also several who expressed concern over access. A complete listing of the comments follows:

- a spur put in and access area designated
- availability of cars
- availability of cars, hard to get
- better access to them
- better cooperation with railroads
- car availability, assurance to get cars
- don't like being used by grain companies
- easier to access, difficult to load
- easier to order
- easy to get to loading site
- finding a spot to load them
- have a loading facility on that line
- have a regular time when you can load
- have easier loading facilities
- have to get a co-opeartive going
- inconvenient to load especially in winter
- leases on rail lines and open sidings
- less hassles, less bookwork
- little less paperwork
- make CNR stand up and honour delivery
- make more information available
- more agents who would do it for you
- more regular train service
- need some way of weighing our product
- not so much hassle
- railway company commitments
- reliability, deliver cars on time
- sample of grade isn't consistent
- scale in my local town
- sites should be easy to load cars
- spot cars on the closest line
- the site was awkward to get into
- there is nothing they could do
- to be more sure of branch lines staying
- to know when cars are coming
- trouble with amount without a scale
- wouldn't move so far from elevator

V. INHIBITORS

Those respondents who had never ordered producer cars for the purpose of loading and shipping grain were asked if there was one particular reason which, more than others, made them reluctant to do so. While many did not have a particular reason, the hassles associated with the paperwork involved stood out as one factor inhibiting greater use of producer cars.

PRIMARY RELUCTANCE TO USE PRODUCER CARS

	Primary Reluctance	Other
Paperwork	29	8
Never thought of	14	2
Convenience/Loading	22	18
Lack of Knowledge	15	7
Grading	9	16
No/Insufficient Savings	3	–
Protein Ratings	–	6
Dockage	–	4
Time to Get Paid	–	2
No Particular Reasons	31	112
Farm/Truck Not Big Enough	30	4
Scale/Weighing	5	6
Local Elevator	7	2

Other reasons cited included age, distance and availability of cars or difficulty getting cars.

They were also asked if there were any groups or organizations in their area that coordinates the ordering and loading of producer cars for farmers. Thirty-eight were able to identify an organization.

ORGANIZATIONS THAT COORDINATE ORDERING AND LOADING PRODUCER CARS

Golden Prairie	–	9
West Central Rail	–	19
Short Line	–	3

Other responses were Campbell Seed (2), Pioneer, Brian Hugaver and Paul Beingessner.

These non-users were then asked if they believed that there would be savings in ordering and loading a producer car compared to hauling to their current delivery point. Only a handful do not recognize that there are savings available in this process.

SAVINGS WITH PRODUCER CARS			
Yes	–	114	(60.6%)
Maybe	–	33	(17.6%)
No	–	24	(12.8%)
Don't Know/Not Sure	–	17	(9.0%)

Those who foresee savings in this method of shipment were then asked what they thought these savings might amount to on average for a producer car of spring wheat.

PERCEPTIONS OF POSSIBLE SAVINGS WITH PRODUCER CARS ($ per car)			
More than $1,500	–	9	(6.0%)
$1,200 to $1,500	–	2	(1.3%)
$1,000 to $1,200	–	8	(5.3%)
$800 to $1,000	–	47	(31.3%)
$500 to $800	–	32	(21.3%)
Less than $500	–	13	(8.7%)
Don't Know/Not Sure	–	39	(26.0%)

Among those expressing an opinion, the anticipated savings per car was approximately $880.

They were then asked how much they would require in average savings in order for them to consider ordering and loading their own car. For both these questions, responses were accepted as either an expression of cents per bushel or dollars per car and used spring wheat (approximately 3,300 bushels) as the example. The results were:

REQUIRED SAVINGS ($ per car)			
More than $1,500	–	17	(9.0%)
$1,200 to $1,500	–	8	(4.3%)
$1,000 to $1,200	–	19	(10.1%)
$800 to $1,000	–	32	(17.1%)
$500 to $800	–	35	(18.6%)
Less than $500	–	16	(8.5%)
Don't Know/Not Sure	–	61	(32.3%)

The average savings required by those producers offering an opinion was $935 per car with approximately equal numbers requiring less and more than this amount.

The required savings are only marginally higher than the perceived savings for most producers. They are also well within achievable levels given reasonable conditions for the process. This tends to confirm that insufficient or unattainable savings are not the key inhibitors to increased producer car patronage.

The non-user portion of the sample was also presented with a series of seven statements about producer cars. For each of these seven statements, they were asked if they strongly agreed, agreed, disagreed or strongly disagreed with the sentiments expressed.

The first statement was:

"I am reluctant to ship by producer car because my product will not receive as high a grade or protein content."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
22 (11.7%)	51 (27.1%)	71 (37.8%)	24 (12.8%)

Sixteen respondents (8.5%) were not sure on this statement.

Younger producers were more likely to express agreement with this statement. Those with higher net farm incomes were also more likely to agree.

Those with larger operations were more likely than others to disagree.

And, the second statement:

"The time required to receive payment when using a producer car is a major concern to me."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
30 (16.0%)	58 (30.9%)	54 (28.7%)	15 (8.0%)

There were 29 who were unsure in their sense for this issue.

Younger farmers and those with smaller operations see this as a greater concern than did others. Income was not a factor.

The third statement:

"I get a better deal shipping through an inland terminal/elevator than I would through loading and shipping producer cars."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
20 (10.6%)	45 (23.9%)	67 (35.6%)	5 (2.7%)

Those over 55 years of age were more likely to disagree while those in the highest income categories were more likely to express agreement.

"If I were more familiar with the process and procedures involved in using producer cars, I would likely make use of this option."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
39 (20.7%)	103 (54.8%)	30 (16.0%)	10 (5.3%)

Familiarity could have more impact among younger producers than among those over 55 years of age. Those with lower net incomes were more likely to agree. The level of agreement held across all sizes of operations.

"Being required to load on a specific day and within a limited time is a major concern in my situation."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
106 (56.4%)	45 (23.9%)	31 (16.5%)	4 (2.1%)

Greater concern for young farmers and those employed off-farms was a concern right

across the board. The smallest (<500 acres) and largest (>3,000 acres) operators showed the highest level of agreement.

"I would be concerned about derailments, leakage or other losses in transit with the use of producer cars."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
31 (16.6%)	58 (31.0%)	68 (36.4%)	23 (12.3%)

A majority of younger farmers consider this as a concern but not a majority of older farmers. Larger operators tend to see this as less of a concern.

And, the final statement:

"Producer cars are a good way to maintain local grain handling and rail traffic for local communities."			
Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
60 (32.3%)	81 (43.5%)	28 (15.1%)	8 (4.3%)

There was no difference in response by age category. Agreement tended to be higher among those with higher net farm incomes and among those with smaller operations.

Ranking these concerns or factors by the level of agreement expressed with these statements we see the requirement to ship on specific times/dates and lack of knowledge as the major issues.

RANKING OF CONCERNS OR FACTORS REGARDING ORDERING AND LOADING PRODUCER CARS		
Concern		**Agreement**
Time Restrictions	–	80.3%
Lack of Knowledge	–	75.5%
Risk/Derailment	–	47.7%
Payment Delay	–	46.9%
Grading/Rating	–	38.8%
Better Deal Elsewhere	–	34.5%

There was also a high level of recognition (75.8% agreement) for the ability of ordering and loading producer cars to maintain local grain handling and rail traffic.

VI. INITIATIVES

All producers surveyed were presented with a listing of some of the aspects of ordering and loading producer cars that might be addressed to make this option more attractive.

For each of these changes or initiatives, they were asked to rate the impact on a scale of "1" to "5". If it would be very appealing and encourage the use of producer cars it would be given a "5" and if it was not of much interest it would be given a rating of "1".

The seven factors and their ratings were:

RANKINGS OF POSSIBLE CHANGES/INITIATIVES THAT WOULD MAKE THE USE OF PRODUCER CARS MORE APPEALING					
	No Interest				**Very Appealing**
	1	**2**	**3**	**4**	**5**
1. The ability to obtain immediate payment on grain shipped by producer car.	18 (8.0%)	15 (6.6%)	51 (22.6%)	41 (18.1%)	101 (44.7%)
2. Organization to coordinate and assist with paperwork.	11 (4.9%)	16 (7.1%)	31 (13.8%)	56 (24.9%)	111 (49.3%)
3. Track-side storage for pre-loading.	20 (8.9%)	18 (8.0%)	42 (18.7%)	49 (21.8%)	96 (42.7%)
4. Grain graded on loading/prior to loading.	12 (5.3%)	11 (4.9%)	25 (11.1%)	53 (23.5%)	125 (55.3%)
5. Access to scale at/near loading site.	10 (4.4%)	2 (0.9%)	16 (7.0%)	45 (19.8%)	154 (67.8%)
6. Guarantee of grade to be received.	7 (3.1%)	3 (1.3%)	17 (7.5%)	37 (16.4%)	162 (71.7%)
7. Assistance to effectively blend grain.	15 (6.6%)	11 (4.9%)	41 (18.1%)	38 (16.8%)	121 (53.5%)

Each of these factors would have a significant amount of appeal to producers in considering the use of producer cars. If they are ranked in accordance with the number giving "high" (4 or 5) ratings, they would be ordered as follows:

RANKINGS OF POSSIBLE CHANGES/INITIATIVES RELATING TO PRODUCER CARS

(4/5 RATING)

Factor		4/5 Rating
Access to Scale	–	87.6%
Guarantee of Grade	–	88.1%
Grade on/Price to Loading	–	78.8%
Organizational Assistance	–	74.2%
Blending Assistance	–	70.3%
Track-Side Storage	–	64.5%
Immediate Payment	–	62.8%

While concerns over grade loss or the ability to obtain better deals at elevators/inland terminals was not an overwhelming factor in determining producer car use. The ability to provide a grade on loading or to guarantee grade would obviously have major appeal to producers.

While the ability to receive an immediate payout has some appeal, the ranking of this factor here confirms earlier observations that this is not the major deterrent to increased use of producer cars.

Respondents were told that grain companies charge approximately $11 per tonne for handling CWB grains. They were asked what they would be willing to pay to a community group that undertook to provide the same service. Very few would pay a premium to a local group.

WILLING TO PAY COMMUNITY GROUP FOR HANDLING ($ per Tonne)			
Less than $5	–	44	(19.0%)
$5 to $10	–	74	(32.0%)
$11 to $13	–	16	(6.9%)
Over $13	–	2	(0.9%)
Same	–	32	(13.9%)
Depends	–	14	(6.1%)
Don't Know	–	49	(21.2%)

Appendix A to the Survey

Questionnaire

Hello. I'm calling for Decision Research. We're a Western Canadian market research company. We're interviewing agricultural producers to get their opinions on some issues related to grain transportation. We're not trying to sell anything but your opinions are very important to us and it will just take a moment. We'd like to speak to the person in your operation who makes the decisions related to the marketing and delivery of grain sold for export. Would you be the one who is principally in charge of making these types of decisions?

[If NO, LOCATE DECISION MAKER or TERMINATE.]

Thank you, first of all:

1A. How many acres in your operation, both owned or rented, would be used for production of grains and oilseeds?

- ☐ 1) Over 3,000 acres
- ☐ 2) 2,000 – 3,000 acres
- ☐ 3) 1,000 – 2,000 acres
- ☐ 4) 500 – 1,000 acres
- ☐ 5) Less than 500 acres

1B. And, for the year 2000, how many acres did you dedicate to the production of wheat, durum, and barley?

- ☐ 1) Over 3,000
- ☐ 2) 2- 3,000 acres
- ☐ 3) 1,500 – 2,000 acres
- ☐ 4) 1,200-1,500 acres
- ☐ 5) 800 – 1,200 acres
- ☐ 6) 500-800 acres
- ☐ 7) Less than 500 acres

1C. And, how many acres were dedicated to other grains?

- ☐ 1) Over 3,000
- ☐ 2) 2 – 3,000 acres
- ☐ 3) 1,500-2,000 acres
- ☐ 4) 1,200-1,500 acres
- ☐ 5) 800 - 1200 acres
- ☐ 6) 500 - 800 acres
- ☐ 7) Less than 500 acres

2A. How far, in miles, did you haul the majority of your grain this past year?

☐ 1) _____miles or _____kilometers

2B. Was this to the nearest elevator point ?

☐ 1) Yes **[To 2D]** ☐ 2) No **[To 2C]**

2.C **[If No to 2B]** How far away would the nearest elevator be ?

☐ 1) _____ miles or _____kilometers

2.D. Did you use a commercial trucker to haul your grain or did you haul your grain yourself?

☐ 1) Commercial Trucker **(ask 2.D.i.)** ☐ 2) Self ☐ 3) Both / Mixed

2.D.i. **[If commercial trucker]** If you were able to haul locally, would you do this yourself or would you use a commercial trucker?

☐ 1) Commercial Trucker ☐ 2) Self ☐ 3) Both / Mixed

2.E. Will the distance you haul grain stay the same over the next few years or is it likely to increase?

☐ 1) Stay ☐ 2) Increase ☐ 3) Don't Know

2F. In the past year, did you make most of your deliveries to a local elevator point or to an Inland Terminal?

☐ 1) Elevator Point ☐ 2) Inland Terminal ☐ 3) Other

2G. What would the distance be from your farm to the nearest loading spot for producer cars?

☐ 1) Miles _____ or kilometers _____ ☐ 2) Don't know /Not Sure

3. Have you ever ordered a producer car for the purpose of loading and shipping your own grain?

☐ 1) Yes **[GO to Q.#9 – Users]**
☐ 2) No **[GO to Q.#4A]**

4A. Is there one particular reason, more than others, that has made you reluctant or made you decide against requesting your own producer cars? **[NO PROMPT]**

- ☐ 1) No / Not Really
- ☐ 2) Never Considered / Thought of
- ☐ 3) Wouldn't know how
- ☐ 4) Time to Get Paid / Delayed Payment
- ☐ 5) Paperwork / Hassles

Better Deals at Elevator / Terminal (**Get to specify**:

☐ 6) Grading ☐ 7) Protein Rating ☐ 8) Dockage

- ☐ 9) May not be convenient time to load / Weather may restrict loading
- ☐ 10) No Savings / Too Little Savings
- ☐ 11) Other **[Record:]** _____

_____

4B. And, do you have any other concerns about the use of producer cars? **[CHECK ALL MENTIONS – NO PROMPT]**

- ☐ 1) No / Not Really
- ☐ 2) Never Considered / Thought of
- ☐ 3) Wouldn't know how
- ☐ 4) Time to Get Paid / Delayed Payment
- ☐ 5) Paperwork / Hassles

Better Deals at Elevator / Terminal (Get to specify:

☐ 6) Grading ☐ 7) Protein Rating ☐ 8) Dockage

- ☐ 9) May not be convenient time to load / Weather may restrict loading
- ☐ 10) No Savings / Too Little Savings
- ☐ 11) Other **[Record:]** _____

_____

5A. Are there any groups or organizations in your area that coordinate the ordering and loading of producer cars for farmers?

- ☐ 1) Yes **[GO TO Q.#5B]**
- ☐ 2) No / DK / NS **[GO TO Q.#6]**

5B. **[IF YES TO 5A]** Do you know what that organization is called?

- ☐ 1) No / Not Sure or
- ☐ 2) Record: _____

_____

6A. Do you believe that there would be savings to you in ordering and loading a producer car compared to hauling to your current delivery point?

- ☐ 1) Yes **[GO TO Q.#6B]**
- ☐ 2) Maybe / Possibly **[GO TO Q.#6B]**
- ☐ 3) No **[GO TO Q.#7]**
- ☐ 4) DK / NS **[GO TO Q.#7]**

6B. **[IF SAVINGS OR MAYBE TO 6A]**
What do you think these savings might amount to on average for a producer car of spring wheat? **[PROMPT ONLY AS NECESSARY]**

- ☐ 1) Greater than $1,500/car- over 45 cents per bushel
- ☐ 2) $1,200 to $1,500/car- 35 to 45 cents per bushel
- ☐ 3) $1,000 to 1,200/car – 25 to 34 cents per bushel
- ☐ 4) $800 to $1,000//car - 15 to 24 cents per bushel
- ☐ 5) $500 to $800/car – 10 to 14 cents per bushel
- ☐ 6) Less than $500/car – less than 10 cents per bushel
- ☐ 7) Don't Know / Not Sure

7. How much in average savings would you require on a producer car, approximately 3300 bushels of wheat, to make you consider ordering and loading your own car?

- ☐ 1) Greater than $1,500/car – over 45 cents per bushel
- ☐ 2) $1,200 to $1,500/car – 35 to 45 cents per bushel
- ☐ 3) $1,000 to 1,200/car – 25 to 34 cents per bushel
- ☐ 4) $800 to $1,000//car – 15 to 24 cents per bushel
- ☐ 5) $500 to $800/car – 10 to 14 cents per bushel
- ☐ 6) Less than $500/car – less than 10 cents per bushel
- ☐ 7) Don't Know / Not Sure

Now I'd like to go through a series of statements that reflect some farmers' reluctance about producer cars. For each of these statements, I'd like you to tell me if you strongly agree or somewhat agree with the statement, disagree or strongly disagree with the statement.

The first statement is: **[ROTATE BY INTERVIEW]**

8A. I am reluctant to ship by producer car because my product will not receive as high a grade or protein content.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8B. The time required to receive payment when using a producer car is a major concern to me.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8C. I get a better deal shipping through an elevator/Inland Terminal than I could through loading and shipping producer cars.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8D. If I were more familiar with the process and procedures involved in using producer cars, I would likely make use of this option.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8E. Being required to load on a specific day and within a certain limited amount of time is a major concern in my situation.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8F. I would be concerned about derailments, leakage or other losses in transit with the use of a producer car.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree
[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

8G. Producer cars are a good way to maintain local grain handling and rail traffic for local communities.

☐ (1) Strongly Agree ☐ (2) Somewhat Agree ☐ (3) Disagree ☐ (4) Strongly Disagree

[☐ (5) Neutral] [☐ (6) Don't Know / Not Sure]

[SKIP TO Q.#12]

9A. **[USERS ONLY]**
Would you describe your use of producer cars as:

☐ 1) Regular
☐ 2) Occasional OR
☐ 3) Seldom

9B. Over the next few years, do you believe your use of producer cars will:

☐ 1) Increase
☐ 2) Decrease OR
☐ 3) Stay about the Same [☐ 4) Not Sure / Don't Know]

9C. For the year 2000, what percentage of your CWB grain would you have shipped through the use of producer cars?

☐ 1) 100% **[GO TO Q.#10]**
☐ 2) 75-100% **[GO TO Q.#10]**
☐ 3) 50-74% **[GO TO Q.#9D]**
☐ 4) 25-49% **[GO TO Q.#9D]**
☐ 5) Less than 25% **[GO TO Q.#9D]**

9D. **[IF LESS THAN 75% CWB GRAIN BY PRODUCER CAR]**
Is there a particular reason, more than others, that you don't ship a higher percentage of your Board grains in this manner?
[NO PROMPT]

☐ 1) No / Not Really
☐ 2) Time Restrictions / trouble getting cars
☐ 3) Higher Risks
☐ 4) Time to Get Paid / Delayed Payment
☐ 5) Paperwork / Hassles
Better Deals at Elevator / Terminal (**Get to specify**:
☐ 6) Grading ☐ 7) Protein Rating ☐ 8) Dockage

- ☐ 9) May not be convenient time to load / Weather may restrict loading
- ☐ 10) No Savings/Too Little Savings
- ☐ 11) Other **[Record:]** _____

_____

10A. **[ALL USERS]**
Is there a particular reason, more than others, that you have chosen to use producer cars to handle your grain shipment? **[NO PROMPT – ONE ONLY]**

- ☐ 1) Save Money
- ☐ 2) Support Local Community / Rail Line
- ☐ 3) Convenience – Time / Line-ups
- ☐ 4) Better Grades
- ☐ 5) Better Protein Content Ratings
- ☐ 6) Less Dockage
- ☐ 7) Other **[Record:]** _____

_____

10B. And, are there any other reasons you use producer cars for handling and shipping grain? **[CHECK ALL MENTIONS]**

- ☐ 1) Save Money
- ☐ 2) Support Local Community / Rail Line
- ☐ 3) Convenience – Time / Line-ups
- ☐ 4) Better Grades
- ☐ 5) Better Protein Content Ratings
- ☐ 6) Less Dockage
- ☐ 7) Other **[Record:]** _____

_____

11. What would you feel would be the one aspect of ordering and loading producer cars that could be improved or changed that would make this option more attractive to yourself and to other producers?

- ☐ 1) Not Sure / Don't Know OR
- ☐ 2) Record: _____

12. **[ASK FOR ALL]**
I just want to close off by listing some aspects of ordering and loading producer cars that might make this option more attractive. In each case, I'd like you to tell me how appealing this would be to you using a scale of "1" to "5". If it would be very appealing and encourage you to use producer cars or use them more extensively, it would be a "5". If it's not of much interest it would be a "1".

The first aspect would be:

12A. The ability to obtain immediate payment on grain shipped by producer car.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12B. The existence of an organization that would coordinate the ordering and loading on behalf of producers and which would assist with paperwork.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12C. Trackside storage for pre-loading to address concerns of time restrictions.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12D. Having the grain graded on loading or in your granary prior to loading.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12E. Access to a scale at/near the loading site.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12F. Obtaining a guarantee of the grade you will receive.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

12G. There was assistance available to effectively blend your grain or blend with other area producers to obtain a greater return.

☐ (1) 1 ☐ (2) 2 ☐ (3) 3 ☐ (4) 4 ☐ (5) 5 ☐ (6) DK/NS

13. Grain companies charge about $11 per tonne for handling CWB grains. If there

was a community group that undertook to provide the same service, how much would you be willing to pay for these services ?

☐ 1) Less than $5 per tonne ☐ 2) $5 /tonne to $10 /tonne
☐ 3) $11 /tonne to $13 /tonne ☐ 4) Over $13 /tonne
☐ 5) Same / about the same ☐ 6) Depends/ depends other costs/savings
☐ 7) Don't Know /Not Sure

And, I just have a few additional questions to make sure we're getting a good representation of the farming community.

14. Could you tell me your age?

☐ 1) Under 35 years
☐ 2) 36 to 54 years
☐ 3) 55 to 69 years
☐ 4) 70 years or older

15. And how many years have you been farming?

☐ 1) Up to 10 years ☐ 2) 11 to 20 years
☐ 3) 20 to 30 years ☐ 4) 31 to 40 years
☐ 5) 41 years or More

16. Do you work on a regular basis off the farm?

☐ 1) Yes ☐ 2) No

17. Which statement would most closely describe you?

☐ 1) I generally like to be the first one n my area to try a new technique or product, or
☐ 2) I tend to be cautious about unproven methods, techniques or new products.

☐ [3) Neither / Don't Know / Not Sure]And finally:

18. For the year 2000, which category best describes your net income from farming operations? Would it be:

1) Negative margin
2) Less than $10,000
3) $10,000 to $25,000
4) $25,000 to $50,000
5) $50,000 to $100,000
6) $100,000 to $250,000 OR
7) Over $250,000
8) [Refused]
9) [DK / NS]

Thank you very much for your time.

Appendix Two

Canadian National Railway Producer Car Loader Station List

Train Run	STATION NAME	PROV	STATION #	SPOT TYPE	CAR SPOT
1.3	LIBAU	MB	64154	O	5
1.4	FORT ROUGE	MB	64439	O	3
1.5	DUGALD	MB	64112	O	1
1.6	BAUDETTE	MN	62152	O	3
1.6	BAUDETTE	MN	62152	L	7
1.6	LA BROQUERIE	MB	62254	O	5
1.6	RAINY RIVER	ON	60944	O	3
1.6	SPRAGUE	MB	62204	O	5
3.1	LETELLIER	MB	64834	L	3
3.1	SILVER PLAINS	MB	64844	O	5
3.2	ALTAMONT	MB	64878	O	2
3.2	BALDUR	MB	65538	O	2
3.2	BELMONT	MB	65542	O	2
3.2	DEERWOOD	MB	64876	O	5
3.2	DUNREA	MB	65574	O	8
3.2	ELGIN	MB	65584	O	4
3.2	FAIRFAX	MB	65582	O	1
3.2	KANE	MB	64862	O	1
3.2	LOWE FARM	MB	64858	O	1
3.2	MIAMI	MB	64874	O	3
3.2	MINTO	MB	65578	O	1
3.2	ROLAND	MB	64866	O	2
3.2	SOMERSET	MB	65484	O	3
3.2	SWAN LAKE	MB	65486	O	2
3.3	BRUNKILD	MB	65358	O	4
3.3	BRUNKILD	MB	65358	O	1
3.3	CARMAN	MB	65372	O	5
3.3	GRAYSVILLE	MB	65374	O	1
3.3	HOMEWOOD	MB	65368	O	5
3.3	SANFORD	MB	65356	O	5
3.3	SANFORD	MB	65356	O	3
3.3	SANFORD	MB	65356	O	2
3.3	SPERLING	MB	65364	O	1
3.3	SPERLING	MB	65364	O	1
3.3	SPERLING	MB	65364	L	2
3.6	RED RIVER SOUTH	MB	64835	O	1
5.1	INGELOW	MB	65736	O	5
5.1	PORTAGE LA PRAIRIE	MB	65320	O	1
5.1	RIVERS	MB	65752	O	10
5.1	RIVERS	MB	65752	L	1
5.1	SMART	MB	65744	O	1
5.2	ELIE	MB	65338	O	9
5.2	ELIE	MB	65338	L	2
5.2	ELIE	MB	65338	L	1
5.2	KATRIME	MB	65818	O	1
5.2	LAURIER	MB	65854	O	4
5.2	PLUMAS	MB	65834	O	4
9.2	INCHKEITH	SK	68116	O	4

9.2	KELSO	SK	68138	O	5
9.2	MARYFIELD	SK	68162	O	5
9.2	WOODNORTH	MB	65632	O	10
9.3	LAMPMAN	SK	68272	O	2
9.3	PARKMAN	SK	68226	O	1
9.5	BRANDON	MB	65650	O	5
11.1	MELVILLE	SK	66412	O	1
11.2	ATWATER	SK	66432	O	8
11.2	OAKNER	MB	67178	O	5
11.2	QUADRA	MB	67154	O	7
11.2	ST LAZARE	MB	67124	O	5
11.3	YORKTON	SK	66250	O	10
13.1	DAUPHIN	MB	71172	O	5
13.2	BIELD	MB	71126	O	1
13.2	BIELD	MB	71126	L	4
13.2	BIELD	MB	71126	L	3
13.2	GRANDVIEW	MB	71146	O	1
13.2	GRANDVIEW	MB	71146	L	8
13.2	KAMSACK	SK	70222	O	8
13.2	MAKAROFF	MB	71106	O	1
13.2	MAKAROFF	MB	71106	L	6
13.2	ROBLIN	MB	71118	O	3
13.2	VEREGIN	SK	70218	L	7
13.3	SWAN RIVER	MB	71508	O	3
13.9	MINITONAS	MB	71388	O	3
15.1	CANORA	SK	70194	O	2
15.2	INVERMAY	SK	70162	L	2
15.2	KUROKI	SK	70148	L	3
15.2	MARGO	SK	70156	O	2
15.2	MARGO	SK	70156	L	3
15.2	WADENA	SK	70138	O	2
15.2	WATSON	SK	70112	O	2
15.4	THE PAS	MB	74532	O	5
15.7	NORQUAY	SK	72656	O	1
15.7	PREECEVILLE	SK	72708	O	2
15.9	CLEMENCEAU	SK	72214	O	2
15.9	CLEMENCEAU	SK	72214	L	2
15.9	HUDSON BAY	SK	72198	O	3
15.9	STURGIS	SK	72316	O	3
17.1	BOOTH	SK	77264	O	3
17.1	GOODEVE	SK	77224	O	2
17.1	KELLIHER	SK	77238	O	6
17.2	WATROUS	SK	77298	O	2
17.2	WATROUS	SK	77298	L	4
17.3	KINLEY	SK	77524	O	3
17.4	SASKATOON	SK	77494	O	5
17.5	IMPERIAL	SK	77607	O	10
17.6	ALLAN	SK	77348	O	4
19.1	BEECHY	SK	77786	O	1
19.1	DUNBLANE	SK	77764	O	10
19.1	LUCKY LAKE	SK	77774	O	3
19.1	MACRORIE	SK	77744	O	7
19.2	DINSMORE	SK	77822	O	1
19.2	ELROSE	SK	77838	O	1
19.2	ESTON	SK	77858	O	4
19.2	ESTON	SK	77858	L	2

19.2	HUGHTON	SK	77836	O	5
19.2	RICHLEA	SK	77854	O	7
19.2	RICHLEA	SK	77854	L	2
19.3	KYLE	SK	77848	O	5
19.3	SANCTUARY	SK	77846	O	1
19.4	GLIDDEN	SK	77912	O	3
19.4	MADISON	SK	77908	O	8
19.4	SNIPE LAKE	SK	77904	L	3
19.4	TYNER	SK	77872	O	5
21.1	D'ARCY	SK	77978	O	2
21.1	DELISLE	SK	77712	O	3
21.1	HARRIS	SK	77942	O	5
21.1	KINDERSLEY	SK	77996	O	4
21.1	KINDERSLEY	SK	77996	L	2
21.1	ROSETOWN	SK	77960	O	1
21.1	ZEALANDIA	SK	77952	O	8
23.1	CLOUSTON	SK	75472	O	6
23.1	DUCK LAKE	SK	75464	O	1
23.1	OSLER	SK	75448	O	5
23.1	ROSTHERN	SK	75458	O	3
23.3	HUMBOLDT	SK	75364	O	5
23.5	ABERDEEN	SK	75394	O	1
23.5	PRUD'HOMME	SK	75386	O	4
23.5	RADISSON	SK	75934	O	3
23.6	HAMLIN	SK	75758	O	3
23.6	NORTH BATTLEFORD	SK	75910	O	3
25.1	PRINCE ALBERT	SK	75480	O	6
25.2	BIRCH HILLS	SK	75266	O	2
25.2	KINISTINO	SK	75258	O	3
25.2	LEFEBVRE	SK	75252	O	4
25.5	ELDERSLEY	SK	75182	O	4
25.5	MISTATIM	SK	75142	O	1
25.5	TISDALE	SK	75184	O	5
25.5	VALPARAISO	SK	75188	O	4
25.6	AYLSHAM	SK	75222	L	2
25.6	BROOKSBY	SK	75208	O	1
25.7	MELFORT	SK	75250	O	4
25.8	WHITE STAR	SK	75484	O	1
27.1	LAKE LENORE	SK	75352	O	1
27.2	CUDWORTH	SK	75414	O	1
27.2	DOMREMY	SK	75292	O	1
29.1	GLASLYN	SK	75606	O	1
29.1	GLENBUSH	SK	75816	O	2
29.1	GLENBUSH	SK	75816	L	2
29.1	RICHARD	SK	75882	O	5
29.1	SPEERS	SK	75876	O	2
29.1	SPEERS	SK	75876	L	2
29.1	SPEERS	SK	75876	L	2
29.1	SPIRITWOOD	SK	75588	O	1
29.3	PARADISE HILL	SK	75674	O	1
29.3	ST WALBURG	SK	75638	O	2
29.3	TURTLEFORD	SK	75622	O	1
29.3	VAWN	SK	75742	O	2
29.6	LEASK	SK	75848	O	8
29.6	MARCELIN	SK	75854	O	1
29.6	MARCELIN	SK	75854	L	2

29.6	SHELLBROOK	SK	75508	O	10
29.7	DEBDEN	SK	75526	O	3
29.7	LEOVILLE	SK	75565	O	2
29.7	MEADOW LAKE	SK	75575	O	4
29.7	POLWARTH	SK	75518	O	10
31.1	BLADWORTH	SK	76148	O	2
31.1	DUNDURN	SK	76124	O	2
31.2	BETHUNE	SK	76178	O	2
31.2	CRAIK	SK	76162	O	4
33.1	MONTMARTRE	SK	76874	O	1
33.1	VIBANK	SK	76884	O	3
33.2	GRAY	SK	76642	O	5
33.2	LEWVAN	SK	76652	O	3
33.2	ROWATT	SK	76632	O	2
33.4	BALCARRES	SK	76974	O	4
33.4	ZEHNER	SK	76934	O	2
33.4	ZEHNER	SK	76934	L	4
33.6	REGINA	SK	76915	O	3
35.1	MOOSE JAW	SK	76410	O	10
35.3	AVONLEA	SK	76504	O	2
35.3	TRUAX	SK	76498	O	3
37.1	DELMAS	SK	86816	O	4
37.1	ISLAY	AB	87156	O	3
37.1	LASHBURN	SK	86832	O	3
37.1	PAYNTON	SK	86822	O	4
37.1	WASECA	SK	86828	O	1
37.1	WASECA	SK	86828	L	1
39.1	CHAUVIN	AB	87588	O	2
39.1	GREENSHIELDS	AB	87574	O	6
39.1	LANDIS	SK	86236	O	4
39.1	SCOTT	SK	86252	O	4
39.1	UNITY	SK	86266	O	2
39.5	BIGGAR	SK	86212	O	5
41.1	CLAYSMORE	AB	87168	O	2
41.1	LAMONT	AB	87236	O	3
41.1	LAVOY	AB	87186	O	3
41.1	MUNDARE	AB	87214	O	1
41.2	DUAGH	AB	87308	O	1
41.2	ELK POINT	AB	87372	O	2
41.2	GIBBONS	AB	87312	O	8
41.2	GIBBONS	AB	87312	O	7
41.2	GIBBONS	AB	87312	O	2
41.2	SMOKY LAKE	AB	87338	O	3
41.2	SMOKY LAKE	AB	87338	L	2
41.2	ST PAUL	AB	87364	O	8
41.2	VILNA	AB	87348	O	2
41.3	BONNYVILLE	AB	87422	O	3
41.4	BEAMER	AB	87284	O	6
43.1	HOLDEN	AB	87548	O	4
43.1	IRMA	AB	87564	O	3
43.1	TOFIELD	AB	87534	O	2
43.1	VIKING	AB	87554	O	4
43.2	BASHAW	AB	87682	O	2
43.2	CAMROSE	AB	87660	O	5
43.2	NEW NORWAY	AB	87668	O	1
43.3	FORESTBURG	AB	87648	O	3

43.3	GALAHAD	AB	87654	O	4
43.3	ROSALIND	AB	87638	O	1
45.1	EDMONTON	AB	87950	O	1
45.2	ENTWISTLE	AB	88558	O	3
45.2	STONY PLAIN	AB	88522	O	4
45.3	MAYERTHORPE	AB	88358	O	1
45.3	WHITECOURT	AB	88378	O	3
45.4	BARRHEAD	AB	84248	O	4
47.1	ALSASK	SK	80214	O	4
47.1	CEREAL	AB	81254	O	2
47.1	FLAXCOMBE	SK	80114	O	1
47.1	HANNA	AB	81352	O	4
47.1	OYEN	AB	81228	O	3
47.1	OYEN	AB	81228	L	5
47.2	EATONIA	SK	80272	O	3
47.2	MANTARIO	SK	80262	O	2
47.4	DELIA	AB	81458	O	1
47.4	DRUMHELLER	AB	81480	O	4
47.4	DRUMHELLER	AB	81480	L	3
47.4	MORRIN	AB	81962	L	5
47.4	ROSEBUD	AB	81628	O	1
49.2	BEISEKER	AB	81736	O	3
49.2	BIRCHAM	AB	81742	O	5
49.2	CALGARY	AB	81679	O	10
49.2	KATHYRN	AB	81724	O	9
49.2	TROCHU	AB	81764	O	1
49.3	ECKVILLE	AB	81844	O	1
49.3	HAYNES	AB	81806	O	7
49.3	SYLVAN LAKE	AB	81838	O	10
90.1	BLUESKY	AB	84385	O	4
90.1	BLUESKY	AB	84385	O	2
90.1	GRIMSHAW	AB	84372	O	3
90.1	HINES CREEK	AB	84397	O	3
90.1	JUDAH	AB	84363	O	4
90.1	JUDAH	AB	84363	O	2
90.1	PEACE RIVER	AB	84366	O	3
90.1	PEACE RIVER	AB	84366	O	2
90.1	RENO	AB	84355	O	6
90.2	DONNELLY	AB	84403	O	5
90.2	FALHER	AB	84407	O	4
90.2	MCLENNAN	AB	84341	O	2
90.3	SPIRIT RIVER	AB	84446	O	2
90.4	DAWSON CREEK	BC	84500	O	6
90.4	DIMSDALE	AB	84466	O	3
90.4	DIMSDALE	AB	84466	L	5
90.4	HYTHE	AB	84483	O	2
90.4	HYTHE	AB	84483	L	5
90.4	WEMBLEY	AB	84469	O	2
90.4	WEMBLEY	AB	84469	L	5
90.5	GRANDE PRAIRIE	AB	84464	O	7
90.5	GRANDE PRAIRIE	AB	84464	O	2
90.6	CLAIRMONT	AB	84462	O	9
90.6	SEXSMITH	AB	84458	O	2
95.1	DAPP	AB	84262	O	2
95.1	FLATBUSH	AB	84275	O	3
95.1	MEARNS	AB	84233	L	7

95.1	WESTLOCK	AB	84255	O	2
95.3	HIGH PRAIRIE	AB	84333	O	4
95.3	KINUSO	AB	84316	O	4
95.4	BOYLE	AB	84152	O	2
95.4	EGREMONT	AB	84132	O	6
95.4	THORHILD	AB	84135	O	1
98.1	HAWK HILLS	AB	89162	O	4
98.1	HIGH LEVEL	AB	89212	O	2
98.1	HOTCHKISS	AB	89152	O	4
98.1	HOTCHKISS	AB	89152	O	3
98.1	KEG RIVER	AB	89182	L	1
98.1	MANNING	AB	89142	O	4
98.1	PADDLE PRAIRIE	AB	89192	O	5

Canadian Pacific Railway Producer Car Loader Station List

CPR Producer Spots for Southern Saskatchewan

Run	Station #	Station Name	Capacity
71.05	6111	Outram	3
71.05	6113	Torquay	2
71.05	6117	Tribune	3
71.06	6081	Midale	2
71.06	6077	Estevan	3
71.07	6088	Weyburn PKIML	18
71.08	6158	Radville	6
72.01	6001	Grenfell	5
72.01	6004	Wolseley	3
72.01	6008	Indian Head	10
72.01	6010	Quappelle	10
72.01	5640	Broadview	1
72.02	6019	Grand Coulee	3
72.02	6022	Pense	2
72.02	6025	Pasqua	19
72.03	6033	Stoughton	6
72.03	6047	Creelman	2
72.03	6048	Fillmore	2
72.03	6052	Francis	3
72.03	6049	Osage	3
72.03	6053	Sedley	11
72.03	6055	Lajord	2
72.03	6058	Richardson	10
72.03	6057	Kronau	3
72.04	6092	Yellowgrass	3
72.04	6096	Milestone	3
72.04	6098	Wilcox	3

72.04	6100	Rouleau	4
72.04	6102	Drinkwater	5
73.01	6186	Lemberg	3
73.01	6189	Balcarres	34
73.01	6188	Abernethy	3
73.01	6192	Lipton	2
73.01	6196	Markinch	4
73.01	6194	Cupar	3
73.01	6197	Southey	3
73.02	6213	Tregarva	5
73.02	6215	Craven	6
73.02	6224	Strasbourg	3
73.02	6226	Cymric	1
73.02	6227	Govan	1
73.02	6225	Duval	7
73.02	6234	Drake	9
73.02	6016	Regina	8
73.02	6230	Nokomis	3
77.01	6334	Coronach	2
77.01	6337	Fife Lake	6
77.01	6339	Rockglen	6
77.01	6339	Rockglen	3
78.01	6312	Chaplin	5
78.01	6314	Ernfold	2
78.01	6319	Rush Lake	2
78.03	6384	Mossbank	5
78.06	6394	Bateman	12
78.08	6325	Swift Current DSPLO	5
78.11	6400	Assiniboia	3
79.01	6483	Tuxford	3
79.01	6487	Brownlee	4
79.01	6488	Eyebrow	11
79.01	6489	Tugaske	15
79.01	6495	Strongfield	5
79.01	6486	Keeler	5
79.01	6499	Broderick	5

CPR Producer Loading Spots for Manitoba

Run	Station #	Station Name	Capacity
61.01	5107	Oak Bank	10
61.01	5106	Hazelridge	5
61.01	5105	Cloverleaf	6
61.01	5098	Whitemouth	11
61.02	5134	Beausejour	7
61.03	5223	Otterburne	5
61.03	5222	Carey	3
61.03	5220	Dufrost	7
61.03	5219	Arnaud	10
61.03	5217	Dominion City	5

61.03	5215	Emerson	8
61.04	5241	Selkirk	2
61.04	5245	Netley	2
61.04	5250	Wpg Beach	4
61.04	5255	Gimli	6
61.05	5277	Stonewall	2
61.05	5280	Balmoral	3
61.05	5282	Teulon	5
62.01	5399	La Salle	4
62.01	5408	Rosenfeld	10
62.01	5435	Altona	3
62.08	5410	Plum Coulee	2
62.08	5412	Winkler	7
62.08	5414	Morden	4
62.08	5417	Darlingford	3
62.08	5420	Manitou	4
62.04	5529	Medora	2
62.04	5527	Deloraine	10
62.04	5520	Boissevain	8
62.04	5519	Ninga	5
62.04	5517	Killarney	6
62.09	5515	Cartwright	4
62.09	5513	Mather	7
62.09	5512	Clearwater	2
62.09	5511	Crystal City	7
62.09	5510	Pilot Mound	5
62.09	5509	Wood Bay	5
62.09	5425	La Riviere	5
62.05	5452	Starbuck	3
62.05	5454	Fannystelle	5
62.05	5456	Elm Creek	5
62.07	5461	Rathwell	3
62.07	5462	Treherne	4
62.07	5464	Holland	3
62.07	5466	Cypress River	2
62.07	5468	Glenboro	3
62.07	5476	Nesbitt	6
62.07	5479	Newstead	10
63.01	5311	Rosser	12
63.01	5312	Meadows	2
63.01	5313	Marquette	5
63.01	5316	Poplar Point	10
63.01	5320	Portage La Prairie	15
63.01	5325	Macgregor	2
63.01	5326	Austin	4
63.01	5327	Sidney	5
63.01	5330	Carberry	1
63.01	5333	Douglas	7
63.02	5348	Macdonald	10
63.02	5353	Westroc	10
63.02	5354	Gladstone	6

63.02	5358	Arden	4
63.02	5360	Neepawa	6
63.02	5362	Franklin	6
63.04	5785	Minnedosa	6
63.04	5824	Basswood	2
63.04	5825	Newdale	5
63.04	5828	Strathclair	3
63.04	5830	Shoal Lake	7
63.04	5835	Solsgirth	5
63.04	5837	Birtle	3
63.04	5858	Foxwarren	3
63.04	5840	Binscarth	4
63.04	5840	Binscarth	2
63.04	5846	Langenburg	6
64.01	5600	Brandon	6
64.01	5612	Alexander	8
64.01	5615	Oak Lake	6
64.01	5618	Virden	6
64.01	5620	Hargrave	7
64.01	5622	Elkorn	4
64.01	5624	Kirkella	2
64.01	5625	Fleming	6
64.01	5627	Moosomin	7
64.01	5627	Moosomin	3
64.01	5627	Moosomin	4
64.01	5630	Wapella	2
64.01	5635	Whitewood	7
64.02	5743	Welwyn	2
64.02	5745	Rocanville	12
64.03	5647	Beresford	8
64.03	5650	Souris	15
64.03	5652	Menteith	15
64.03	5654	Hartney	4
64.03	5658	Napinka	10
64.03	5660	Melita	7
64.03	5662	Pierson	2
64.03	5664	Gainsborough	3
64.03	5665	Carievale	3
64.03	5666	Carnduff	4
64.03	5668	Glen Ewen	2
64.03	5669	Oxbow	3
64.03	5671	Alameda	3
64.03	5673	Frobisher	4
64.04	5685	Pipestone	13
64.04	5686	Reston	2
64.04	5688	Sinclair	2
64.04	5690	Antler	5
64.04	5692	Redvers	5
64.04	5692	Redvers	5
64.04	5694	Wauchope	3
64.04	5696	Manor	2

64.04	5698	Carlyle	2

CPR Producer Spots for Northern Saskatchewan

Run	Station #	Station Name	Capacity
74.01	5850	Bredenbury	2
74.01	6574	Yorkton	6
74.02	6602	Wadena	4
74.02	6596	Kelvington	9
74.02	6605	Foston	4
74.02	6606	Rose Valley	10
74.02	6608	Archerwill	2
74.02	6614	Tisdale	10
74.02	6620	Codette	2
74.02	6625	Nipawin	12
74.03	6603	Choiceland	2
74.07	6576	Orcadia	7
74.07	6579	Theodore	2
74.07	6580	Insinger	2
74.07	6581	Sheho	2
74.07	6584	Foam Lake	4
74.07	6587	Elfros	3
74.07	6588	Mozart	1
74.07	6590	Wynyard	5
75.01	6653	Dafoe	2
75.01	6654	Jansen	2
75.01	6655	Esk	7
75.01	6657	Guernsey	12
75.01	6661	Viscount	11
75.01	6665	Colonsay	2
75.01	6666	Elstow	6
75.01	6671	Floral	2
75.02	6685	Spalding	12
75.09	6768	Perdue	2
75.09	6771	Biggar	2
76.01	6817	Tramping Lake	2
76.02	6831	Salvador	2
76.02	6821	Kerrobert	4
76.03	6846	Thackeray	6
76.03	6853	Baldwinton	2
76.03	6857	Marsden	4
76.03	6865	Lloydminster	5
76.05	6943	Unity	4
76.05	6947	Senlac	12
76.05	6950	Macklin	1
76.05	6951	Hayter	8
76.05	6952	Provost	5
76.05	6953	Cadogan	16
76.05	6957	Czar	32
76.05	6958	Hughenden	2

76.05	6962	Hardisty	4
76.06	6506	Sovereign	9
76.06	6512	Herschel	8
76.06	6513	Stranraer	5
76.06	6514	Plenty	4
76.06	6516	Druid	2
76.06	6510	Rosetown	2

CPR Producer Spots for Alberta

Run	Station #	Station Name	Capacity
81.02	7338	Cantuar	23
81.02	7338	Cantuar	6
81.02	7339	Success	2
81.02	7340	Pennant	2
81.02	7343	Cabri	2
81.02	7346	Abbey	2
81.02	7347	Lancer	2
81.02	7347	Lancer	10
81.02	7348	Portreeve	2
81.02	7350	Sceptre	2
81.02	7351	Prelate	2
81.02	7352	Leader	5
81.03	7366	Mendham	4
81.03	7368	Burstall	3
81.03	7374	Richmound	2
81.04	7323	Irvine	2
81.04	7321	Walsh	2
81.04	7319	Hatton	2
81.04	7316	Maple Creek	2
81.04	7312	Piapot	2
81.04	7308	Tompkins	2
81.04	7307	Carmichael	2
81.04	7305	Gull Lake	2
81.04	7303	Webb	2
81.05	7304	Golden Prairie	2
81.06	7330	Medicine Hat	2
82.01	7448	Indus	4
82.01	7447	Dalemead	2
82.01	7446	Carseland	4
82.01	7443	Gleichen	3
82.01	7442	Cluny	4
82.01	7396	Bassano	3
82.01	7432	Brooks	4
82.01	7429	Tilley	2
82.05	7480	Makepeace	2
82.05	7481	Hussar	2
82.05	7482	Chancellor	3
82.05	7483	Standard	5
83.01	7689	Stirling	2

83.01	7687	Wrentham	2
83.01	7686	Conrad	2
83.01	7685	Skiff	2
83.01	7684	Legend	2
83.01	7683	Foremost	2
83.01	7682	Nemiskam	2
83.01	7681	Etzikom	2
83.02	7708	Warner	2
83.02	7707	Milk River	2
83.03	7721	Welling	10
83.03	7724	Spring Coulee	2
83.04	7770	Tempest	2
83.04	7768	Chin	2
83.04	7765	Taber	4
83.04	7761	Purple Springs	2
83.04	7757	Burdett	6
83.04	7755	Bow Island	2
83.04	7752	Winnifred	2
83.04	7751	Whitla	2
83.04	7749	Seven Persons	5
84.01	7792	Brockett	2
84.01	7794	Pincher	2
84.03	7835	Herronton	2
84.03	7833	Mossliegh	2
84.03	7831	Arrowood	2
84.03	7828	Queenstown	2
84.03	7827	Milo	2
84.03	7468	Lomond	2
84.03	7466	Enchant	2
84.03	7463	Vauxhall	2
84.04	7856	Blackie	2
84.04	7851	Vulcan	2
84.04	7850	Kircaldy	4
84.04	7848	Champion	2
84.04	7844	Barons	2
84.04	7842	Nobleford	2
85.01	8262	Airdrie	5
85.01	8265	Crossfield	10
85.01	8267	Carstairs	6
85.01	8269	Didsbury	4
85.01	8271	Olds	10
85.01	8275	Innisfail	6
85.01	8285	Red Deer	4
86.03	8450	Lacombe	3
86.03	8563	Ponoka	6
86.03	8565	Hobbema	2
86.03	8485	Wetaskiwin	6
86.03	8570	Millet	2
86.03	8575	Leduc	2
86.03	8577	Nisku	2
86.04	8586	Aspen Beach	2

86.04	8587	Bentley	2
86.04	8589	Rimbey	7
87.01	8523	Greisbach	6
87.01	8520	Josephburg	4
87.01	8519	Elk Island	2
87.01	8513	Wostok	8
87.01	8512	Andrew	3
87.01	8510	Willingdon	2
87.01	8505	Two Hills	3
87.01	8501	Myrnam	3
87.01	8499	Derwent	3
87.01	8496	Clandonald	2
87.01	8493	Marwayne	4
87.02	8603	Calmar	5
87.02	8602	Buford	2
87.02	8601	Thorsby	3
87.02	8600	Sunnybrook	3
87.03	8480	Camrose	3
87.03	8477	Bawlf	4
87.03	8475	Daysland	6
87.03	8474	Strome	1
87.03	8472	Killam	2
87.03	8470	Sedgewick	2
87.03	8469	Lougheed	2

Appendix Three

Grain Blending and Transport in West-Central SK – Phase 1:

Determination of Revenue-Maximizing Grain Blends for a Sample of 650 Grain Bins Located within the West-Central Region

Executive Summary

Submitted to:

Paul Beingessner, Project Manager
Transportation Consulting Services
(on behalf of FARMCO Steering Committee)

Submitted by:

Gordon A. Sparks, Ph.D., P.Eng.
Kent J. Kostuk, M.Sc., P.Eng.
Paul N. Christensen, B.A., M.A. (Econ)

September 28, 2000

2.0 Introduction

In June, 2000, representatives of FARMCO approached Dr. Gordon Sparks, Kent Kostuk and Paul Christensen (hereafter, the *Project Team*) to develop computerized grain blending models—building upon previous work conducted by staff at Canadian Wheat Board (CWB). The models were meant to determine the revenue-maximizing combination of grains stored in a sample of approximately 650 grain bins scattered within the West-Central region of Saskatchewan. Two models required development: one corresponding to a sub-sample of *Canadian Western Amber Durum* (CWAD) grains, and the other to a sub-sample of *Canadian Western Red Spring* (CWRS) grains.[1]

The objectives of the modeling exercise specified by FARMCO representatives were three-fold:

- **Determine the feasibility of the modeling approach:** Given the sheer scale of the problem, can the Project Team develop and execute models capable of determining optimal (i.e., revenue-maximizing) blends of available CWAD and CWRS grains?

- **Determine the allocation of bins to each of the final blends:** Presuming the modeling approach proves successful, what is the proportional allocation of each bin to each of the final blends? For instance, can the model tell us what proportion of the contents of Bin X will end up in Final Blend B?

- **Determine the magnitude of revenue gains attributable to optimal blending:** Presuming the modeling exercise proves feasible, can the Project Team quantify the magnitude of blending premiums (i.e., revenue gains) corresponding to both the CWAD and CWRS samples?

3.0 Data and Models

The data used by the blending models to achieve the desired results include: (a) the sample data, (b) CWB price lists for both CWAD and CWRS grains, and (c) Canadian Grain Commission (CGC) grading tables. The *sample data* corresponding to each bin describe its contents in terms of grain type (i.e., CWAD or CWRS), tonnage, protein count, and grading attributes.[2] The *CWB price lists* contain the price points corresponding to CWAD and CWRS grains of varying protein count and grade. The *CGC grading tables* contain the specific grading standards corresponding to the two grain types (e.g., standards for test weight, ergot, hard vitreous kernels (HVK), fusarium, sawfly midge, etc.).

To determine maximum revenues, the models were designed to allocate the contents of each bin into blends that best exploit CWB price points while satisfying the grading standards imposed by the CGC. In other words, the models effectively "mix" all available grains into various CWB price categories such that the total, collective revenues earned by producers reach an absolute maximum (i.e., no other blending arrangement could possibly produce higher total revenues). Since the CGC

[1] In total, 403 bins contained CWAD grains and 245 bins contained CWRS grains.
[2] For a complete list of the relevant grading attributes captured within the CWAD and CWRS blending models, see the final report.

grading standards are implicitly included within the modeling environment, the grading attributes corresponding to the revenue-maximizing blends meet or exceed the relevant grading standards. For instance, if one of the final blends exploits the CWB price category "DRY 1 CWRS 13.0", then the blend is *guaranteed* to meet or exceed both the required protein count (i.e., greater than or equal to 13.0) and all relevant CGC grade 1 standards for CWRS grains (i.e., test weight greater than or equal to 75.0 grams/0.5 litre, ergot content less than or equal to 0.01%, etc.).

Note that development of the CWRS and CWAD blending models as well as data and output preparation activities were conducted on a desktop PC using Excel (spreadsheet software), Visual FoxPro (database software), and XA (specialized optimization software).

4.0 Model Results

The results generated by the models and analyzed by the Project Team not only meet, but exceed the original objectives of the study. Hence, we divide this section of the Executive Summary into two parts: (a) base results, and (b) additional results and insights.

4.1 Base Results

The base results specifically address the objectives of the study. These include:

- **Feasibility of modeling approach:** The computerized blending models developed and executed by the Project Team produced the desired results and did so in a timely manner.[3]

- **Determine allocation of bins to final blends:** The results describe the exact, proportional allocation of each bin to each of the final blends. For instance, among the CWAD bins, 100% of the contents of Bin 6 was allocated to the "DRY 2 CWAD 0.00" blend. In contrast, 79% and 21% of the contents of Bin 349 were allocated, respectively, to "DRY 1 CWAD 13.8" and "DRY 1 CWAD 13.5".

- **Determine the magnitude of revenue gains attributable to blending:** Through optimal blending of available CWAD grains, revenue gains of approximately ***$8.39 per tonne*** are generated. Through optimal blending of CWRS grains, revenue gains of approximately ***$2.04 per tonne*** are generated.

4.2 Additional Results and Insights

Additional results and insights are derived from a careful examination of the blending results summarized above as well as an examination of the so-called *shadow prices* generated by the model. They include:

- **Wide divergence in blending premiums between the grain types:** As mentioned above, the optimal CWAD blends resulted in revenue gains of approximately $8.39 per tonne, whereas the optimal CWRS blends resulted in revenue gains of only $2.04 per tonne. As it turns out, the CWAD grain samples were characterized by substantial *variability* across grade and protein count—with a relatively high proportion of grain

[3] All model runs were conducted on a 350Mhz, Pentium II-based PC with 64mb RAM. Complete model runs required about one minute of computational effort to generate the desired results.

suffering poor quality and low protein counts. Hence, optimal blending arrangements generated by the CWAD model were able to improve both the overall grade and protein allocations across CWB price categories such that huge leaps in revenues occurred. On the other hand, the quality of the CWRS grain samples was fairly *uniform*—possessing generally good quality and high protein counts. Hence, although optimal blending arrangements generated by the CWRS model did improve revenues, the room for improvement was narrow to begin with. ***This demonstrates that the magnitude of blending premiums will depend upon the variability in available grains—which will, no doubt, vary across season and region—as well as the structure of CWB pricing across grade and protein count.***

- **Few bins "split up":** The results of the blending models demonstrate that less than 10% of the bins were divided across price categories to achieve optimal blending revenues. In other words, over 90% of the bins were allocated *wholly* to one price category (e.g., 100% of the contents of bin X allocated to DRY 1 CWAD 12.5). Moreover, of the bins divided, less than 1% were divided into more than two price categories. ***From a practical standpoint, this suggests that blending on a relatively large scale need not result in the arduous division of each bin into several price categories.***

- **Shadow prices *versus* CWB prices:** The "shadow price" corresponding to a particular bin is the measure of its incremental contribution to total revenues. For instance, if the shadow price of bin X is $215 per tonne, then each additional tonne of grain embodying characteristics similar or identical to bin X would—if added to the blend—contribute an additional $215 per tonne to total revenues. As illustrated in the Final Report, ***the shadow prices reveal: (a) the contribution of many bins to blending revenues far exceed the CWB price which would be offered in the absence of blending (e.g., in some cases, the shadow price exceeds the CWB price by over $60 per tonne), and (b) where blending activities occur, no producer will lose revenues through participation (i.e., the minimum difference between the shadow price and the CWB price is $0.00 per tonne).***

In summary, the model results meet (and, indeed, exceed) the objectives of Phase I. The blending models proved feasible, generated the desired bin allocations, and computed the corresponding revenue gains. However, having successfully completed Phase I of the grain blending exercise, it is now time to determine the direction of future work. This will, of course, hinge on the practical objectives and constraints defining the future activities considered by FARMCO.

5.0 Future Directions

Whatever the shape of future blending models, they must reflect the reality of future blending activities considered by FARMCO. Hence, in order to ensure that prospective blending models reflect the realistic objectives and constraints corresponding to future intentions, FARMCO must provide a "list" of *scenarios*, *factors* and *activities* that it may face down the road.

Scenarios must depict the range of possible blending arrangements FARMCO may organize (e.g., rail-side loading of producer cars to facilitate blending at port). ***Factors*** should include all attributes which will influence the value of the final blends (e.g., frost damage and moisture content may

require inclusion within future blending models). Additional ***activities*** should include any additional blending services FARMCO may choose to provide (e.g., cleaning and/or drying).

Once identified and defined, the scenarios, factors, and activities considered by FARMCO become the basis for future model development. Of course, as results emerge from each iteration of the blending models, the insights gained may shape the course of action FARMCO pursues. Hence, the model development process is reciprocal in nature: the information provided by FARMCO helps the Project Team create models and generate insight that, in turn, help FARMCO determine its next steps. ***Cooperation between client and contractor, then, is the most effective means of ensuring the development of truly useful models.***

It is instructive to note that blending operations represent only part of FARMCO's future operations. Presuming FARMCO grows and expands, the range of activities it may undertake (as expressed in its founding principles) will grow and expand as well. ***Therefore, it is important to view the blending models in the context of a wider modeling environment that can facilitate good decision-making in a number of different areas.*** As discussed in the conclusion of the Final Report, the wider modeling environment may include: (a) crop planning and risk management, (b) transport and "positioning" logistics, (c) inventory management, and (d) revenue distribution and payment scheduling. All these activities can be modeled using mathematical and computational techniques akin to those applied within the blending models. Again, however, the usefulness of such models is determined by their reflection of reality; where the client and contractor cooperate, useful models can be developed.

Appendix Four

Letter to farmers participating in the Collection and Analysis Study

Grain Logistics Pilot Project
Box 142
Eston, SK SOL 1AO
Phone (306) 962-4528
Fax (306) 962-4994

October 12, 2000

Dear participant;

I want to thank you for participating in the Grain Logistics Pilot Project sampling program. Approximately 50% of the 95 Project participants submitted grain sales information. Enclosed are results from the data received. We think you will find this of some interest.

Formatting of Data

For the purpose of reporting, every actual sale entry was mimicked by the computer using the same gross metric tonnes, but using the opposite delivery mode (i.e if you shipped by elevator, it compares the results a producer car would have brought, and vice versa) based on the CGC grade results. The data was formatted as follows:

1. **Sale Type: ACTUAL vs COMPARISON**
   For every "actual"sale entry you provided, the computer generated a "comparison" sale based on the actual gross tonnes sold but valued using the grade the CGC gave your grain.

2. **Delivery Mode: PRODUCER CAR vs ELEVATOR**
   Based on the delivery mode of your "actual" sale, a "comparison" entry was created using the same amount of gross metric tonnes shipped but valued using the opposite delivery mode. For example, if you hauled 90 metric tonnes to an ELEVATOR, then a comparison was generated for 90 metric tonnes shipped via a PRODUCER CAR valued using your CGC grade analysis.

Assumptions for Comparisons

There are a number of assumptions built into our comparison calculations. These are outlined below.

1. **Trucking Incentives**

Trucking incentives at inland terminals vary greatly and change during the year. Some terminals offer higher incentives for better grades and lower incentives for lower grades. Incentives are sometimes higher at different times of the year. In calculating these, we collected incentive figures from all the area terminals and then took an average and applied this to the scenarios where the exact trucking rebate was not available. So when you are looking at the "what if" scenarios, you can change the trucking incentive numbers if you have better information. The trucking incentive table used for comparisons is attached.

2. **Trucking Rates**
Trucking rates were done in a similar fashion. We contacted several truckers and also looked at the rates terminals charge farmers when the terminal organizes the trucking. We took an average of these numbers and pro-rated them to a per mile rate. The longer the haul the more discounted the rate became. The trucking table used for comparisons is attached.

3. **Elevation Rate**
A common elevation rate of $9.00/MT was used for the comparisons. Note that this is low by this year's standards.

Reporting

1. **Detailed Comparison Report**
This report details the sale information as it relates to each sample. Each sale is identified by a **Sales Reference Number**. This number may correspond to your cash ticket number if you provided it, or it may reference your producer car#, otherwise we assigned a unique number to identify each lot sold from every bin. For each Sales Reference Number listed on this report there are two columns. The first column represents your actual grain sale and the second column represents the computer generated comparison.

1. **Actual Grain Sales**
This report summarizes all of your "actual" sales data. It gives an overall total and value of grain sold including all incentives and added marketing benefits as you reported them to us.

1. **Delivery Mode Comparison Report**
This is a two page report which compares the Producer Car values to the Elevator values. Page 1 represents the value of your grain had it been sold via Producer Car, and Page 2 represents the value of your grain had it been sold via the Elevator Method. All Elevator benefits are listed as you reported them (ie: grade improvement, dockage rebate, trucking incentives), and likewise the Producer Car benefits (ie: producer car incentive, dockage rebate) are listed.

If you look on Page 2, you will see there is a smaller box with the headings "PRODCAR MODE", "ELEVATOR MODE", and "DIFFERENCE". This box shows the overall difference between shipping your grain in a producer car and hauling your grain to an elevator. If the difference is a positive number, then the producer car option would have been

better for you overall, or if the difference is a negative number, then the elevator option would have been better for you overall. The difference is listed as total net gain/loss as well as the per metric tonne net gain/loss.

Statistics

1. The total Actual Sales reported amounted to **21,548.763 MT**, of which **8,160.939 MT (38%)** were shipped via PRODUCER CAR and **13,387.824 MT (62%)** were shipped via ELEVATOR system.

1. If all farmers who forwarded sales information had shipped their grain via producer car, on average they would have been better off by **$6.71/MT**. Considering the variance in quality this year, in conjunction with blending "deals" that were gained from terminals, this is an impressive potential gain overall.

1. **68%** of those participants who opted to haul their grain to an elevator, would have been better off to ship their grain in a producer car at the grade the CGC gave their samples. This is a startling piece of information because I am assuming that farmers who used the elevator system did so because they felt this was their best option.

1. **8%** of those participants who opted to ship their grain via producer car would have been better off to haul to an elevator.

1. Based on the Project's original CGC sample results, **60%** of those participants who hauled their grain to an elevator saw no change in grade, **33%** saw a grade increase and **7%** saw a grade decrease.

1. Based on the Project's original CGC sample results, **79%** of those participants who shipped their grain in producer cars saw no change in grade, **14%** saw a grade increase and **7%** saw a grade decrease.
   This tells me that if you get your samples graded by the CGC, you will likely get that grade at port. You also have a better chance of going up a grade than of going down a grade.

If all farmers who returned their samples to us had sold their grain in producer cars, the total net gain to the group would have been $148,977.00 This was based on 21,500 metric tonnes of grain. If we extrapolate that amount to the 700,000 tonnes of grain grown in our region, it would yield extra revenue of $4,849,000.

Conclusion

We think the numbers will surprise some people. If your grain is of good quality, there is almost always a large advantage to selling through the producer car. Even if it was of lower quality, the deals made at elevators are not always as good as they might look. For example, many times the elevator assesses lower protein and higher dockage. These numbers have a real impact on the total dollars received.

Last year, because there was so much frost in the grain, much of it went through the elevator at the lower grades anyway. If there are no deals to be had, a producer car can at least add some dollars to the dismal prices. In some cases, farmers made some pretty good deals at elevators.

Another thing that I noticed from the data which farmers returned is that some of you did a very good job of blending your grain to improve your returns. The farmers who did this were successful for two reasons - they had good, accurate samples, and they carefully calculated how to blend based on the detailed analysis they got from the CGC.

There is one further note which I need to add. Comparing the results from the CGC grading of your samples to the returns from actual sales is only as useful as the validity of the samples. You will have to assess how confident you feel about the samples you took when you interpret these results. If there is one thing I've learned over the course of this Project, it is that samples are extremely important to us as farmers if we want to be able to get the best deal for our grain. Once you take a good sample, the next most important thing is to get it analysed by the Grain Commission so you really know what you've got. We have to know exactly what we've got to sell if we want to get the best possible price. Knowing what we have depends on how good our samples are. It is a part of farming we can't afford to neglect.

Many thanks to those who took part in our blending Project. Your co-operation was greatly appreciated.

Sincerely,

Paul Beingessner
Project Manager

Appendix 5

A Survey of Grain Handling Terminals At Vancouver

Prepared for

GRAIN COLLECTION ALTERNATIVES PILOT PROJECT

Travacon Research Ltd.

August, 2000

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Introduction

This report presents the results of a survey whose object was to assess the impact of various potential Farmco grain shipping options on grain terminal operations at Vancouver. In the course of this survey, the following contacts were made:

- Al Graham, Terminal Manager, United Grain Growers (UGG), Vancouver
- Gerry Skura, Regional Manager, James Richardson International (JRI), Vancouver
- Dave Kushner, General Manager, Cascadia Terminal, Vancouver
- Flavio Campagnier, Manager, West Coast Operations, Saskatchewan Wheat Pool, Vancouver
- Bill Weymark, Vice President, Operations, BCR Marine Ltd., Vancouver
- Susan Forbes, Manager, Marketing, BCR Marine Ltd., Vancouver
- Tony Nardi, Neptune Bulk Terminals, Vancouver

Dave Kushner, on behalf of Cascadia Terminal, declined to participate in the survey without knowing the identity of the client. Flavio Campagnier, on behalf of Saskatchewan Wheat Pool, declined to participate on the same grounds, but did refer the request to Richard Wamsbutter in Regina. Contact with the latter has not yet been successfully made.

Telephone discussions were held with the remaining participants, resulting in development of information relevant to the terms of reference of this survey. Interview reports for these discussions are appended to this report. The following sections summarize the findings with respect to each of the questions raised.

Factors Relating to Car Arrivals That Impact Efficiency of Terminal Operations

The principal factors relate to mixing of different kinds and grades of grain within a train or block, and to the presence of runouts in a train or block. Runouts in the turn arise because the contents of a car must be handled at a terminal other than of that to which the train or block was delivered. This, in turn, arises in an effort to concentrate handling of small volume items at specific facilities so as to minimize requirements for ships to relocate during the loading process.

Processing of runouts through the unloading facility has negative impacts upon the unloading operation because it interferes with efficient operation of the indexer. Processing of mixed items within a train or block causes inefficiency when there is need to change cleaning screens if the grain must be cleaned. If the operation is being handled as a direct hit, the need to handle mixed items within a train or block slows down the unloading operation to the extent that different cars require delivery to different holds within the ship.

Unloading of trains or blocks of single grade contributes to better storage bin utilization than processing of mixed grades within a train or block.

Requirement to Sort Cars Prior to Unloading

There is no requirement to sort cars prior to unloading, but both JRI and UGG, in fact, do sort cars, with JRI employing two yard switchers around the clock and UGG providing one such switcher. The purpose of the switching operations is to remove runouts and to put cars of same grade together to improve processing efficiency. The cost of such switchers is one measure of the benefit which these terminals could derive if cars were to be presented for unloading in a more efficient way. Unfortunately, such savings could not be realized unless all, or at least a majority, of arriving cars were presented in such a manner.

Efficiencies That Result When Trains Loaded at Inland Terminals Are Unloaded at the Same Company Terminals at Port

The grain companies indicated that an attempt is made to have trains loaded at their inland terminals handled at their facility at port. The primary reason for this is that the railway incentives apply only if the cars are unloaded within 48 hours at port. Since the railway incentive is to the account of the loading company, the unloading company has no incentive to meet this requirement if it is not the same as the loading company. The loading company loses the incentive if the unloading company fails to meet the 48-hour requirement.

JRI also indicated that its terminal operations are most efficient when it can control the movement away from the country, and hence there is a terminal efficiency benefit when it can handle trains from one of its inland terminals through to its unloading facility at Vancouver.

Benefits Obtainable if Arriving Trains Consist of One Type of Grain Within a Narrow Range of Grades or a Single Grade

As discussed above, such would produce handling efficiencies with respect to unloading speed and bin utilization. The survey was unable to obtain any quantified information will respect to these benefits. For the terminals which use their own switchers to sort cars prior to unloading, such benefits would be attainable only if a sufficient portion of their overall throughput were presented in this manner to allow them to reduce their use of local switchers.

Benefits of Having Accurate and Detailed Information Ahead of Time About Degrading Factors in Arriving Grain

Survey respondents indicated that there would be benefits from improving advance information, since it would enhance their ability to plan for efficient terminal operations. None were prepared to provide any quantitative information.

Composite Grading

Survey respondents indicated that there would be no positive or negative impact of a requirement to co-mingle different grades arriving in different cars within a train or block. They did emphasize that they would take no responsibility for the quality of the resulting mix.

Gerry Skura of JRI indicated that a co-mingling of that sort would not necessarily achieve the same results as blending, since there would be no guarantee that the resulting product would be adequately homogeneous. The terminals would have no problem living with a grade pre-established for an entire block, but would take no responsibility for the resulting mixture. If the customer were subsequently dissatisfied with the result, that would be a problem between the Canadian Wheat Board and its customer.

Willingness of Grain Companies to Share Cost Savings Arising from Farmco Initiatives

The grain companies would not offer any specific information in response to this question. One possible measure of willingness to share cost savings is a discount of $1 per tonne currently offered by JRI with respect to direct hit operations. That provides some measure of the scale of what the existing grain companies are willing to provide in respect of sharing efficiency savings.

Generally, direct hits are handled directly from rail cars to vessels. Sometimes product will be stored for a day or two, primarily as a consequence of ship arrival delay.

Alternatively, Farmco might consider using Vancouver Wharves or Neptune, which terminals seem more inclined to tailor a specific charge related to the way in which grain is presented. Both terminals indicated that their handling charges would be in the range of $8-9 per tonne. Neptune could handle only direct hit operations. Vancouver Wharves can provide for storage as well as direct hit operations, with storage being available on a lease basis rather than on an as-required basis. Neither terminal can provide cleaning. Both are eager to attract new agricultural products business and have enhanced their facilities for that purpose.

Interview Report – Al Graham, Terminal Manager, United Grain Growers, Vancouver

Al indicated that there would be advantages with respect to terminal efficiency if arriving cars were in solid blocks of single kinds and grades of grain. The advantages would arise from some increase in unloading speed, plus ability to use storage bins more efficiently than when blocks of mixed grade are handled. However, Al was not prepared to give any indication of potential incentives that the terminal might be willing to give to obtain such solid blocks of cars.

UGG does some sorting of cars, using its own local switcher, to kick out runouts prior to their being handled through the unloader. Runouts arise primarily because the kind/grade of a specific car must be delivered to another terminal in Vancouver. This, in turn, is caused by a desire to reduce the requirements for ships to have extra movements within the harbour. Runouts amount to approximately 3% of total car arrivals. It is advantageous to remove runouts prior to unloading, because their inclusion can interfere with proper operation of the car-unloading indexer.

UGG does attempt to have cars loaded at its inland terminals handled to its Vancouver terminal elevator. The reason for this is that the railway incentives on which such cars are moved are valid only if the cars are unloaded within 48 hours of arrival at destination. Since the incentives are to the account of the inland terminal, if they are unloaded at a different company's terminal in Vancouver, the unloading elevator company does not have any incentive to ensure that the cars are expeditiously unloaded and, in such cases, the incentive discount may be lost.

There would be advantages in having advance information regarding degrading factors in grain, but Al was not prepared to provide any quantification of this benefit.

Al did not indicate that there would be any positive or negative impact on his operation if he were required to blend contents of cars with differing grades at time of unloading.

Interview Report – Gerry Skura, Regional Manager, James Richardson International, Vancouver

Gerry indicated that there are advantages if cars are received in blocks of single kind or grade. Such an arrangement would minimize delays in the unloading operation caused by the need to set up screens for different grades. It would also provide efficiencies in being more susceptible to efficient advanced scheduling. The benefits are greatest if the grain is pre-cleaned and if it is to be handled as a direct hit. In such situations, JRI currently offers a discount of $1 per tonne.

JRI employs two switching locomotives per shift to sort arriving cars based upon grades and to remove runouts. This is an indicator of the benefits of receipt of sorted cars. If all of the cars arrived presorted, he could eliminate much of the expense of such yard switching.

JRI would like an operation where it could control the flow of product from the country and schedule it for maximum efficiency at terminal. In such a context, advance information respecting degrading factors would be of benefit.

Cars of different grade within a block could readily be co-mingled at the time of unloading. Gerry distinguishes between co-mingling and blending to the extent that blending provides for uniformity of the product throughout, which may not be the result when product is co-mingled at the time of unloading. JRI charges for blending (as opposed to co-mingling) on the basis of negotiated blending tariffs. Such charges vary widely according to the nature of the blend. For a simple protein blend, the charge might be $.30-.50 per tonne. For a complex blend, it might range up to $10 per tonne.

Gerry stressed that it is important to be careful in establishing export grades at the time of origin, since JRI has frequently found it necessary to clean arriving product which has been cleaned in the country because the cleaning in the country failed to bring the product to export standards.

Interview Report - Tony Nardi, Neptune Bulk Terminals

Services of Neptune would be restricted to direct hit operations, since Neptune does not have any facility for either cleaning or storage of grain. Trains or blocks of differing grades could be handled, although the unloading operation would be slowed down and charges would therefore be higher than with a train or block of single grade or, alternatively, of different grades all going to the same ship hold. Handling charges for a direct hit operation involving export wheat could be expected to be in the range of $8-9 per tonne.

From: "Tony Nardi" <tnardi@nbtcl.bc.ca>
To: "John Edsforth" <travacon@worldnet.att.net>
Sent: Friday, June 09, 2000 10:55 PM
Subject: Export Wheat Handling

John,

Sorry I missed your call. I will be in the office on Monday the 12th, so feel free to call me.

I read your letter which was a good description of how the Canadian grain system works. As a bulk terminal, we are restricted in handling of export wheat due to some regulatory issues unless the wheat is cleaned and graded to export standards at origin. We cannot clean or blend grades within our storage areas. In fact, currently we do not have any storage dedicated to wheat. We have built our business and extensive experience in handling specialty grains on the "direct hit" concept, i.e., loading of cars directly to a vessel.

As such, our facility can load clean wheat, canola or barley directly from rail cars to vessel at rates in excess of 1,200 MT/HR. We can receive unit trains of up to 110 cars at a time and, dependent on conditions, can have up to 200 cars on site at one time. We have automatic sampling, but do not have batch weighing systems necessary for CGC certification, although as of May, 2001, we will have in place a dedicated grain berth with both auto sampling and certified weighing systems in place at our new Berth #3.

Pricing for a direct hit movement from railcars to vessel for a unit train of grain would be very competitive and this could be negotiated, as there will be considerations to hours of work, etc. I would appreciate your call to discuss further.

Tony Nardi

Interview Report - Susan Forbes, Manager, Marketing, BCR Marine

The BCR Marine Agriproducts Facility at Vancouver Wharves is relatively new, and is currently handling about 50,000 tonnes per month. As currently configured, its capacity is about 3 million tonnes annually. The facility could not provide for cleaning of grain.

On-site storage currently amounts to 30,000 tonnes, with room to expand. Storage capacity is leased to specific shippers on a monthly or annual basis, rather than being available on a per tonne storage basis. To provide some indication of cost levels, the construction cost of a bin with 3,000 tonnes storage capacity is about $1 million. However, the terminal has an old potash bin which could be converted to grain use for about $2 million and would have 20,000 tonnes storage capacity. All currently available storage is leased.

Handling charges would depend upon the way in which arriving cars are presented, and would be greater if there were a need to frequently switch ship holds during a direct hit operation to handle changing grades throughout a train or block. For a train or block all going to a single hold, the handling charge would be in the range of $8-9 per tonne, and would be lower for larger blocks than for smaller blocks. The charge would be the same for a direct hit as for product which is stored and re-handled.

Unlike other grain handling terminals, charges at Vancouver Wharves are inclusive of stevedoring, which runs in the range of $1 - $1.50 per tonne at other terminals. Vancouver Wharves also does not charge wharfage, which runs an average of 14¢ per tonne at other terminals.

Appendix Six

Sampling Accuracy Study

Sample Number	Grain	CGC unload Grade	CGC sample Grade	CGC unload Dockage	CGC sample Dockage	CGC unload Protein	CGC sample Protein	CGC unload HMK%	CGC sample HMK%
1	DURUM	1	1	0.00	2.70	12.5	13.9	91.5	97.0
2	DURUM	2	2	2.00	2.80	12.4	13.1	70.9	78.0
3	DURUM	1	2	0.80	1.60	11.2	11.5	80.0	72.2
4	DURUM	3	3	1.80	2.10	11.9	12.1	52.2	47.7
5	DURUM	1	2	0.60	0.84	11.2	11.7	83.4	78.4
6	DURUM	3	4	1.30	1.70	10.9	11.3	41.7	31.0
7	DURUM	3	4	1.20	1.70	11.1	11.3	40.0	31.0
8	DURUM	1	1	1.50	1.00	13.5	13.4	80.2	86.0
9	WHEAT	1	1	2.20	2.00	11.5	13.6	N/A	N/A
10	WHEAT	1	1	3.30	2.00	12.1	13.6	N/A	N/A
11	DURUM	4	4	1.30	1.40	<11.0	11.1	24.0	7.0
12	DURUM	1	1	1.30	1.70	11.5	11.8	86.1	82.0
13	DURUM	3	4	1.50	1.30	9.0	9.8	40.0	31.6
14	WHEAT	1	1	1.70	2.40	11.9	12.0	N/A	N/A
15	WHEAT	1	1	0.00	0.80	14.4	14.3	N/A	NA
16	DURUM	2	1	0.80	0.70	13.2	13.3	71.3	81.0
17	DURUM	1	1	2.00	2.20	13.9	14.0	93.0	97.3
18	DURUM	3	4	0.00	0.70	12.8	9.9	40.0	31.0
19	DURUM	2	2	0.80	1.20	11.2	11.7	68.9	64.8

Appendix Seven – A Guide to On-Farm Sampling

Introduction

When harvest is done each fall, many farmers take the ice cream pails containing samples of the grain they've harvested around to the grain elevators in their area. They use these samples as the basis for bargaining with grain companies for the grade they will receive when they sell that grain. They may also take these samples to the Canadian Grain Commission (CGC) to receive an assessment of the grade and dockage.

Farmers who take this approach rely on these samples to accurately represent the grain they have in their bins. If a sample is not accurate the farmer may be giving away value, or may find the Grain Company does not want to live up to the bargain it has made.

Farmers loading producer cars may use samples as a way to assess the benefits of blending their own grain or to compare the benefits of producer cars against shipping through an elevator.

All these things mean that accurate samples are more important today than ever. Most farmers will tell you that they take accurate samples, but there is evidence this is not so. The techniques and equipment most farmers use do not yield results that are satisfactory.

The Grain Logistics Pilot Project has developed a template for the design of a grain marketing and transportation system that uses information technology to replace expensive capital infrastructure, and to increase returns to producers. For this system to work, the samples collected must accurately represent the grain stored in farmers' bins.

The purpose of this guide is to give farmers a protocol they can follow to obtain accurate samples.

INSIDE THIS GUIDE

1 Introduction and Sampling Protocol

2 Sampling Tools and Techniques

3 Subsampling and Dividing Samples

4 Storing Samples

5 Sampling Device Construction Procedure

Sampling Protocol

On farm sampling protocol consists of five major components. These components are key to obtaining an accurate sample, and consist of the following:

I. When is the best time to obtain a sample?

II. How do I take a sample?

III. What do I do if my sample is too large?

IV. How should samples be stored?

V. Where do I get my samples analyzed to find out what I've got?

I. When should samples be taken?

The best time to get a sample of the grain in your bins is when they are being filled at harvest. At this time, farmers can take "endgate" samples that accurately represent the grain in the entire bin. If the bin is very large, farmers can even use these samples to determine how grain is layered within

continued on page 2

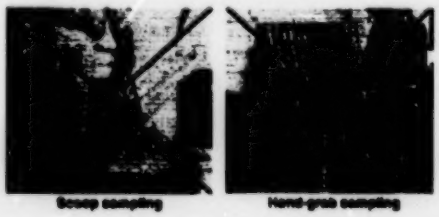
When should samples be taken? cont....

the bin. This may be necessary if grain from more than one field or area is stored in a single bin. Samples can also be taken from a bin by probing it after it is full, but it is more difficult for a farmer to obtain an accurate sample this way. To obtain a representative probed sample from a grain bin, it must be taken from the top, and several probings are necessary. Without specialized equipment, this is difficult and dangerous.

II. How do I take a representative sample?

Many farmers take "scoop" or "grab" samples from the stream of grain as it is being unloaded from the truck. Despite the farmer's best intentions, such samples cannot be fully representative of the grain in a load.

This is because grain has a tendency to segregate and stratify as it is moved from combine to truck and from truck to bin. Finer particles concentrate in the center of a container and coarse particles tend to move to the outside.

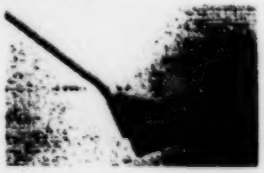


Scoop sampling — Hand-grab sampling

Grab samples are by necessity taken from only one part of the grain stream and so cannot represent all parts.

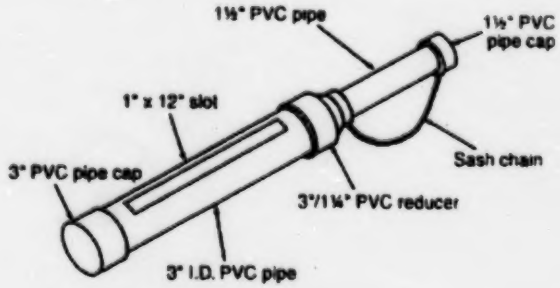
To take a representative sample, farmers must mimic the crosscut samplers used in port terminals and some inland facilities. A sampling device that allows the farmer to sweep the entire stream of grain must be used.

The pelican sampler is one such device. It has a leather pouch, about 7 inches deep, 2 inches wide and 18 inches long. This is attached to a long handle. The pelican sampler is swung through the grain stream to collect a sample. However, these devices are expensive and not readily available to farmers.



Sampling Tool

North Dakota State University (NDSU) has produced plans for a grain-sampling device which can be easily and cheaply built. It is made from PVC or ABS pipe. When used as recommended, this device will provide representative samples. The rest of the instructions in this manual refer to the use of a sampler such as the one North Dakota State University designed.

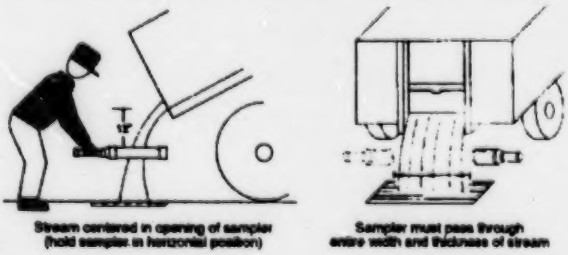


North Dakota State University Pipe Sampler

Sampling Technique

The way to obtain an accurate sample using the grain sampling device shown above is to pass it through the entire stream of grain, from side to side and front to back. This would be done by holding the sampler to one side of the stream, and then swinging it through the stream to the other side.

The sampler must not be allowed to overflow



Stream centered in opening of sampler (hold sampler in horizontal position) — Sampler must pass through entire width and thickness of stream

during this operation because this would mean that not all the stream was sampled to the same extent. After the sampler has passed through the stream, it is emptied into a pail or similar container large enough to hold the entire set of samples from the truck.

Sampling Technique.... *from page 2*

The size of the sample is less important than the way it is taken, but should not be less than 1 to 2 pounds from a 300-bushel lot. The sampler should be held at a right angle to the grain stream, and as nearly horizontal as possible. It should be moved at an even speed through the stream. This speed should be fast enough that the sampler does not completely fill when the pass is complete.

On a truckload of 300 bushels, the farmer should make at least 4 passes with the sampler. These should be taken at regular intervals. The very first grain unloaded and the very last grain should not be sampled, as these are not representative of the total lot.

More passes are better than fewer, but it is not necessary to take a large sample in order for it to accurately represent the grain.

For a 600 bushel load, at least 2, and perhaps more than 2 additional passes should be made with the sampler.

With today's high capacity augers and large trucks, a large amount of grain can be unloaded in a very short time. The grain stream may be so large that it is hard to hold the sampler and pass it through the stream. In this case, the operator should reduce the size of the stream while the sample is being taken by partially closing the truck endgate while the tool is being swept through the stream.

Combining Samples

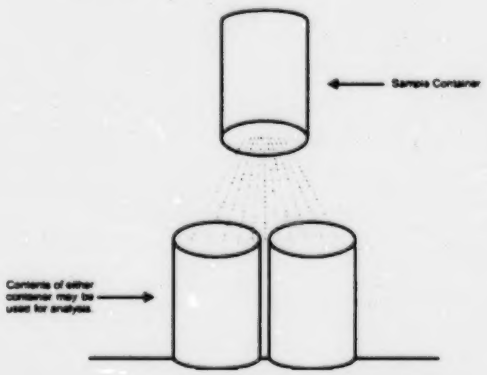
It is important that the sample taken from each lot of grain be the same size. The farmer should be consistent in the number of passes he takes from each load. If more than one truck is used, the amount of grain represented by each sweep of the tool should be the same.

As each truck is unloaded, until the grain bin is full, the samples should be added to the pail or pails used to store them. It would be a good idea to cover this container to prevent contamination from spilled grain or accidental adding of grain to the pail. If the moisture of the sample is to be determined, the sample should be stored in a moisture proof bag.

III. How do I divide a sample?

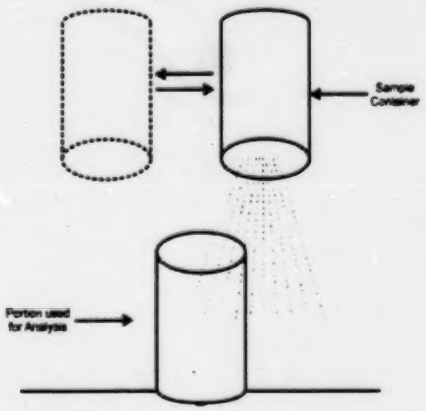
When the bin is full, the sample collected will be larger than necessary. This sample must be divided to get a smaller sample that is representative of the whole lot. The farmer can use two methods to achieve this.

a) To use this method, two (2) empty pails of similar size are placed side by side on a tarp, with the sides touching. The large collected sample is then poured down the center where the pails touch so that each pail will receive about half the sample. The contents of one pail can then be poured into the bin and the other pail can be divided again, if necessary, and as many times as necessary, to get down to the sample size required. For a 2,000-bushel bin, a sample of at least 2 pounds should be retained. The sample should be somewhat larger as bin size increases.



b) The second method is similar with a sample put into a container large enough to hold it, and then mixed by hand. This mixing will cause the fines to settle to the bottom, so should be thorough but not excessive. A container is then placed on a tarp. With a sweeping motion, pour the grain from the sample while allowing the stream to move across the stationary container. Pour at a rate so that after several passes, the sample container is empty at the time the desired quantity for analysis is collected

How do I divide a sample? ...cont.



IV. How should my samples be stored?

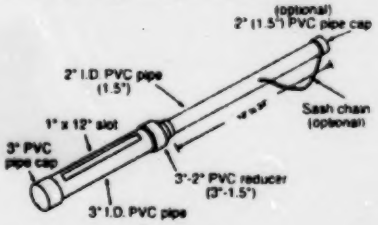
Samples should be stored in moisture proof bags if the moisture content is to be determined. Large ziplock bags work well for this. If samples are stored in pails, the pails should be covered to avoid contamination by rodents. Such contamination will render the sample useless.
The sample container, whether bag or pail should be clearly marked with the number of the bin it represents.

V. Where do I get my samples analyzed?

The CGC has regional offices throughout the prairies that for a fee will determine the grade, dockage, moisture content and protein of a sample. Additional factors such as Hard Vitreous Kernel (HVK) count may also be obtained if requested. Farmers may have to pay an additional amount if requesting more information.
Grain companies will also give farmers an assessment of the quality of the grain. It should be remembered that this is not an official grade, and grain companies will make their assessment at least partly based on their judgment about what they can do with that grain in their facility.
The CGC represents an impartial, unbiased agency whose inspectors are thoroughly trained. All grain that goes to port, whether in a producer car or from a grain elevator is inspected by the CGC. This is how the official grade is determined.

Pipe Sample Construction

The length of the handle can be varied according to the preference of the user. The 24-inch length is specified in the material list and procedure, but it can be shortened if desired. Handle diameter can also be varied. A larger diameter handle will permit more rapid emptying of the sampler. However, the diameter needs to be limited to allow for ease of grasping the handle. A 1.5-inch diameter handle worked well in the research. A 2-inch diameter handle is specified to permit more rapid emptying, but other sizes are appropriate. The rate of emptying must be limited to prevent spilling through the sampler slot.



Materials List

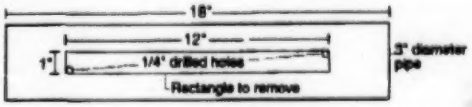
- 1 -- 18 inch length of 3 inch diameter schedule 40 PVC pipe
- 1 -- 3 inch PVC pipe cap
- 1 -- 24 inch length of 2 inch diameter PVC pipe
- 1 -- 3 to 2 inch PVC pipe reducer
- 1 -- 2 inch PVC pipe cap (optional)
- 1 -- 20 inch length of sash chain (optional)
- 2 -- 3/8 inch long #12 self-tapping sheet metal screws (optional)
- 1 can -- PVC pipe cleaner
- 1 can -- PVC pipe glue

Tools Required

- Saw with fine-toothed blade, 12-16 teeth per inch. (An electric sabre saw works well.)
- Drill with 1/8 and 1/4 inch bits
- Flat file
- Medium sized "C" clamp

Construction Procedure

1. Smooth the ends of the 3-inch diameter PVC pipe and bevel the outside edge of one end to about 45 degrees with a file.
2. Clamp the 3-inch pipe horizontally to a workbench using the stationary jaw of the clamp inside the pipe. Do not over-tighten the clamp; the pipe may split.
3. Draw a 1-inch x 12-inch rectangle lengthwise on the pipe. The rectangle must be parallel to the centerline of the pipe and 3 inches from either end as shown below.
4. Drill 1/4-inch diameter holes just inside two opposite corners of the rectangle as shown below.



5. Cut out the rectangle, preferably in one piece since that piece may be used later for footpads if desired. Saw from each hole to the next corner as shown.
6. Remove any excess material in the corners and smooth any sharp edges of the slot with a file.
7. Square the ends of the 24-inch length of 2-inch pipe. Use the file to bevel the outside edge of one end of the pipe so the 2-inch cap will easily fit, but tightly enough so it doesn't slip off without some effort.
8. Fasten the 3-inch x 2-inch pipe reducer to the beveled end of the 3-inch pipe following the instructions for the PVC pipe cleaner and glue. Be sure the reducer is pushed completely on so there are no inside seams to trap seeds. Next glue the 3-inch pipe cap to the other end of the 3-inch pipe. Again, be certain the pipe cap fits completely on the pipe.
9. Glue the non-beveled end of the 2-inch pipe into the reducer on the large pipe assembly. Be sure the pipe seats fully into the reducer.
10. (Optional) The sampler may be used without the 2-inch pipe cap. If the cap is used, a sash chain may be used to prevent the loss of the cap. If the sash chain is used, drill a 1/8 inch diameter pilot
11. (Optional) Cut four footpads form the material removed from the slot, so the footpads are about ¾ inch X ¾ inch in size. Use the file to smooth the edges and corners of the footpads. Set the pipe assembly on a smooth, flat surface with the slot at the bottom. Block it in pace so that it will not roll. Glue the four footpads to the assembly with tow on the 3-inch pipe cap and two on the 3-inch section of the reducer. The footpads should be located so they prevent the sampler from rolling. . ☒

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George Maher conducted the sampler research described in this manual while a graduate student at North Dakota State University (NDSU). Leslie Backer was the research leader.

Appendix Eight

Corporate Structure

This information has been provided by Scott A. Exner of MacPherson Leslie & Tyerman, under a contract with the Grain Collection Alternatives Pilot Project.

Possibilities for Corporate Structure for Farmco

There are two main possibilities for a corporate structure and there are advantages and disadvantages of both. One of the implications that must be taken into account is how the corporate structure affects raising capital in the future. The Saskatchewan economy is diversifying and often outside capital is required in order to funds that diversification. As a general comment, the larger the amount of capital that is required for the project, then it is more likely that a business corporation is better suited to meet your goals and ensure that raising the necessary capital is feasible.

The two possibilities are:
1. a new generation co-operative; and
2. a business corporation.

While another option is a co-operative, a co-operative may not satisfy a number of the criteria to make it a viable option, and, in particular, the objective of being able to raise capital. Therefore the other two options only are discussed. Even with the new generation co-operative, there are concerns about its ability to raise capital for significant enterprises, particularly raising capital from non-producers and venture capitalists given the issues this raises for the board of directors (as noted below).

There are some fundamental items to keep in mind where analyzing a corporate structure, namely:

1. The corporate structure will determine who has voting rights and is able to elect directors to the board.
2. Where there are more than one classes of shares or members and shares, it will be important for the board to understand what kind of duty the board is under, particularly when it comes to making decisions which put the interest of one class of shares against another class or shareholders against members.
3. Who is entitled to the profits of the business (shareholders, members or customers)?
4. How does the corporate structure affect the ability to raise capital and, in particular, from those investors who are not customers of the corporation?

Each option for incorporation will now be discussed in turn.

New Generation Co-operative

Under *The New Generation Co-operatives Act* (Saskatchewan) (the "New Gen Act") it is possible to include options for raising capital within a co-operative structure that has not been traditionally been available within a co-operative structure. For a co-operative under the New Gen Act, there are members, holders of common shares and holders of preferred shares. In addition, there are some preferred shares that may only be issued to members. Each of these three categories will be dealt with in turn.

Member

A member is a person who has met the conditions of membership set forth in the bylaws and has been accepted as a member by the directors. Under section 187 of the New Gen Act, subject to the provisions of the New Gen Act, the bylaws govern membership in a co-operative. Under section 189 of the New Gen Act, an individual must be 16 years of age or older to become a member. Under the definition of "person", a person includes an entity or public body. Therefore, it appears that a corporation may also be a member.

With respect to voting rights, under section 189 of the New Gen Act, no member or delegate is entitled to more than one vote at a member's meeting but a member who is a holder of preferred shares may exercise any voting rights associated with those preferred shares. Where a holder of preferred shares is entitled to vote on a matter, that person is entitled to one vote for each preferred share of which that person is a holder. In addition, a vote on any matter by a member shall be at a meeting separate and apart from a vote on that matter by a holder of preferred shares. With respect to the principles you enunciated, it is possible that a person would have more than one vote by virtue of being a member and holding preferred shares which have voting rights attached to them.

In addition, Part XVI of the New Gen Act deals with fundamental changes and amalgamations. Section 243 and 244 of that Act provide that the members may amend the articles in various ways if a special resolution is passed. In addition, under section 246, if an amendment to the articles affects a class or series of preferred shares, it must be approved by special resolution of the holders of that class or series affected. Without going into all the scenarios in which holders of preferred shares will be entitled to vote, it should be noted that there will be circumstances where approval will be required by the holders of preferred shares. The situations will, generally speaking, be limited to very fundamental changes in the corporation.

Election of Directors

Under section 164, directors are elected by the members at the annual general meeting of the members and annually at a meeting of the holders of preferred shares who are entitled to elect directors.

Common Shares

Under section 32 of the New Gen Act, the common shares confer on their holders equal rights to receive dividends declared on the common shares and, if the articles so provide, to receive the remaining property of the co-operative on dissolution. In addition, under section 31(3), the common shares must have a par value fixed in the articles. Generally speaking, under section 209, when a member withdrawals, within 5 years the co-operative shall purchase all the common shares from that member at par value.

The common shares would, generally speaking, be used to raise the equity in the co-operative.

Preferred Shares

A preferred share is a share in the capital stock of a co-operative that is not a common share and has special rights or restrictions as provided in the articles. If the articles allow for preferred shares, they must also set out the following:

1. Whether the preferred shares may be issued to persons who are not members of the co-operative;
2. Whether the number of preferred shares is to be unlimited and, if not, the maximum number of preferred shares that may be issued;
3. The number of classes of preferred shares; and
4. The special rights or restrictions attaching to preferred shares and, if there is to be more than one class, the designation of each class and special rights or restrictions attaching to each class.

The articles may also provide certain voting rights for preferred shares. Generally speaking, under section 34, there are two options. A preferred share may have the right to vote at an election of directors by reason of an event that has occurred or is continuing or by reason of a condition that has been fulfilled. Generally speaking, this is normally when the company is in financial difficulty, however, the New Gen Act does not limit it to these circumstances. The second option is that the holders of the preferred shares or any class or series of preferred shares may elect a fixed number or percentage of directors. The percentage may not exceed 20% of the directors under section 34(2). If the holders of the preferred shares are entitled to vote at a meeting, each preferred share entitles a holder to one vote.

Preferred Shares for Members only

Under section 35, the articles may also provide for a class of preferred shares that:

(a) are issued only to members;
(b) are designated as a preferred share of this class;
(c) carry no right to vote on the election of a director;
(d) obligate the holder of the preferred share to provide a specific good or service to the co-operative or that give to the holder of the share the right to receive from the co-operative a specific good or service, pursuant to a contract between the holder of the preferred share and the co-operative, and that obligation or right may vary among the holders based on the number or percentage of the shares held; and
(e) may provide to the holders of the preferred shares a special right to participate:
    (i) in the surplus of the co-operative by way of patronage dividend or bonus payment;
    (ii) in any reserve amount of the co-operative to receive dividends; or
    (iii) in the remaining property of the co-operative on its dissolution

Issues Arising on Distribution of Earnings and Profits

One of the issues for the preferred shares is whether any special right to participate in the surplus of the co-operative is explicitly set out in the articles (i.e. the dividend rate is specified and non-discretionary) or whether it is left up to the discretion of the board of directors. If it is left up to the discretion of the board of directors, it must be remembered that this conflicts with the interest of the other shareholders. Under section 178 of the New Gen Act, every director and officer of a co-operative, in exercising the powers and discharging the duties of a director officer, shall:

(a) act honestly and in good faith with a view to the best interest of the co-operative; and

(b) exercise the care , diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

It is unclear from this section where a director's duty lies if the interest of one class of shares conflicts with another class of shares or with interests of members. I feel this uncertainty is a major issue with respect to a new generation co-operative since the board and potential investors are unsure how dividends will be split between different classes of shares. Therefore, for producers and non-producers which hold only one class of shares, there may be uncertainty on their rate of return. I also feel that it puts the board of directors in a difficult position since they will not know how to deal with the competing interests, particularly given that they risk a lawsuit for breach of fiduciary duty from both classes of shareholders.

Raising Capital

The Securities Act, 1988 regulates the sale of shares. Some of the implications of this will be briefly described. A more complete analysis is beyond the scope of this document and must be considered on a case by case basis in any event. For example, a company with 5 shareholders is approached differently than a company which intends to have 250 shareholders. *The Securities Act, 1988* is important for two reasons:

1. The requirements it imposes when shares or memberships are being issued for the first time by a co-operative or corporation; and
2. The requirements it imposes on a member or shareholder trying to sell his or her shares in the future.

Under the New Gen Act, it is possible for the issuance of the shares by the co-operative to be exempt from the application of *The Securities Act, 1988*. The problem this presents, however, is that the subsequent sale by a shareholder is still regulated by *The Securities Act, 1988*. Practically speaking, when a company sells shares, one of the things it must consider is how the shareholders will be able to sell their shares at a later date. If a new generation co-operative sells shares by being exempt from *The Securities Act, 1988*, in my view, it is more likely that those shareholders will have more difficulty selling those shares at a later date since the resale must comply with *The Securities Act, 1988* and steps could have been taken when the shares were issued by the co-operative to make this easier by complying with *The Securities Act, 1988* when the shares were issued by the co-operative.

Business Corporation

The second option for a corporate structure would involve a company incorporated under *The Business Corporations Act* with one class of common (voting) shares and two classes of preferred shares, issuable in series (The rationale for the preferred shares will be explained below).

Common Shares

The common shares could be purchased by anyone, however, given the purpose of the company is to operate "Farmco" in a given geographical location, it is unlikely someone or a corporation outside the geographical area would be interested. It is also possible, in a share offering, to restrict the number of shares each person can purchase under the share offering. While this does not prevent them from acquiring shares from others in the future, it restricts their initial purchase. Often this is a way to give some comfort to investors that someone will not initially control the corporation and that it is widely held.

It is difficult to deny individuals the ability to purchase shares under a share offering merely on the basis that they have a "direct stake in the results of Farmco" since you ultimately get into a debate of what is and what is not a direct stake. For example, is a (non-producer) business owner in the community where Farmco operates someone with a direct stake in Farmco? Therefore it would perhaps not be advisable to try to limit who can buy shares in this model but, practically speaking, since it is an investment, an investor is likely to have a direct stake or they invest to support the local community.

In order to utilize the services of Farmco, you could require that the producer own a specific number of shares in Farmco in order to enter into a contract with Farmco. Often this is a useful way to raise capital since it forces individuals to purchase a minimum number of shares if they want to use the service. The contract would be separate from the individual's share ownership and the person could keep their shares even if they did not have a contract for a specific year.

Shareholders are normally entitled to one vote for each share that is owned. Therefore those individuals who have invested more money into the company would, generally speaking, have a larger percentage of the voting shares than other shareholders.

Limited Voting Rights in Business Corporation

A twist on the above structure could be made if you truly want a one shareholder/one vote scenario. In this scenario, you would initially issue two classes of shares to investors. The investor would receive one share of the first class which would be a voting share. In addition, each investor would purchase as many shares of the second class as they wished and the second class of shares would be non-voting and would represent the vast majority of their investment and the equity portion of their investment. This would mean that initially each shareholder gets one vote regardless of the number of non-voting shares they own. You could require each investor to buy a minimum number of non-voting shares if you wished. Once again, the shares would be transferable once they were issued so it is possible that someone could own more than one share of the first class and therefore have more than one vote at a later date. Practically speaking in order to accumulate more voting shares, in this scenario, the buyer would likely be required to buy the non-voting shares also owned by the seller.

Preferred Shares

The preferred shares are not intended for issuance in the near future. One scenario where it would be useful to have another class of shares is if you had a company that was going to invest a large amount of money in Farmco and you wanted to restrict their voting rights. The preference shares could be issued to that investor only and they could have different voting rights since it is a separate class. For example, that investor could appoint a certain percentage of the board of directors based on their percentage equity in the company or they could have the right to appoint a specific number of directors to the board. The preferred shares would be non-voting otherwise except as required under *The Business Corporations Act* for fundamental changes to the company. This is often used as a way to maintain local control while still having a large institutional investor who brings other experiences to the company as well as additional capital.

Payments to Users of Farmco's Services

For a business corporation, it is recommended that, if there is a desire to pay "dividends" to users of the services, this be accomplished through attractive pricing for the service rather than through the payment of a dividend. The contract, which sets the pricing, does not give rise to any fiduciary duty for the board of directors. In other words, the issue of whose interests to prefer would not arise in this scenario since there is no conflict between the users of the service and the shareholders since the directors do not owe a fiduciary duty to users of the service. The corporation does, however, have a contractual relationship with the user which is set out in the contract with the user of the service.

Appendix Nine

Farmco's Contract with Farmers

The following is a detailed version of a possible contract between Farmco and a farmer who is participating in Farmco's operation.

AGREEMENT

Between: ("FARMCO")

And: _____
of _____

(the "Producer")

WHEREAS:

A. FARMCO has a location where grain may be delivered or will designate point(s) where grain is to be delivered by the Producer (such location is hereinafter called the "Loading Location");

B. The Producer owns or leases farm land and the Producer wishes to commit certain grain grown on or located on such land for delivery to the Loading Location on the terms and conditions set out below;

C. The land owned or leased by the Producer (the "Producer's Land") and the grain to be committed under this Agreement will be detailed in one or more commitments executed by FARMCO and the Producer, in the form set out in Schedule "B" attached hereto (such commitments are collectively, and individually, hereinafter referred to as the "Commitment");

NOW THEREFORE, in consideration of the sum of Ten ($10.00) Dollars paid by each party hereto to the other and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged) FARMCO and the Producer agree as follows:

1. **Term of Agreement**
   Subject to section 3, the term of this Agreement shall be one year (the "Primary Term") beginning on the date of this Agreement.

2. **Grain Covered by this Agreement**
   For the Primary Term and each Renewal Term (as hereinafter defined) in which the Producer wishes to commit grain under this Agreement and in which FARMCO wishes to accept grain, FARMCO and the Producer shall execute a Commitment which shall specify, inter alia,:
   (a) the tonnes of grain to be committed by the Producer under this Agreement;
   (b) the kind of grain to be committed by the Producer under this Agreement;
   (c) the grade of the grain to be committed by the Producer under this Agreement;

(the grain identified in an executed Commitment is collectively hereinafter referred to as the "Grain")

(d) the legal description of the Producer's Land;
(e) the delivery point closest to the Producer's Land;
(f) the delivery period;
(g) the administration fee to be deducted by FARMCO from the amount paid to the Producer for the Grain;
(h) the cleaning fee, if any, to be charged by FARMCO and paid by the Producer for the Grain;
(i) the Canadian Grain Commission inspection fee to be charged by FARMCO and paid by the Producer for the Grain;
(j) the freight consideration pertaining to the Loading Location closes to the Producer's Land; and
(k) the storage fee, if any, to be paid by FARMCO to the Producer for the time the grain is located on the Producer's Land;

and the Producer acknowledges that the Grain is:

(l) to be grown on the Producer's Land;
(m) located in grain bins or other storage facilities located on the Producer's Land; or
(n) a combination of (l) and (m) above.

3. **Automatic Renewal, Increase in Committed Grain and Termination of Agreement**
At the end of the Primary Term and any Renewal Term (as herein defined), this Agreement shall automatically renew for a further 1 year term (the "Renewal Term") commencing on the expiry of the Primary Term or the Renewal Term, as the case may be, on the same terms and conditions (including this section 3). Notwithstanding the foregoing, this Agreement shall terminate on the tenth anniversary of the date of this Agreement, however the obligation to make any payments, where the obligation arose prior to the date of the termination of this Agreement, shall survive the termination of this Agreement.

4. **Grain Committed During Any Renewal Term**
Notwithstanding the foregoing, in the event the Producer wishes to increase the amount of grain committed under this Agreement during the Primary Term and any Renewal Term for such Primary Term or Renewal Term, the Producer and FARMCO may execute a further Commitment, and it is acknowledged by the Producer that the items set forth in section 2 hereof may differ for such grain in relation to any other grain committed during such Primary Term or Renewal Term. For greater certainty, FARMCO shall not be obligated to execute a Commitment for any such increase in the amount of grain committed under this Agreement during the Primary Term or any Renewal Term.

5. **Permit Book**
The Producer agrees and acknowledges that FARMCO intends to and is expected to obtain a permit book (the "Permit Book") under the Canadian Wheat Board Act and that any grain from the Producer's Land delivered to the Loading Location pursuant to this Agreement will be recorded in FARMCO's Permit Book. The Producer hereby acknowledges and agrees that FARMCO has an interest and share in the grain grown by the Producer on the Producer's Land or located on the Producer's Land which has been identified in a Commitment executed by the Producer and

FARMCO. For greater certainty, the Producer acknowledges and agrees that FARMCO is entitled to the funds or benefits derived from:

(a) blending the Grain (other than any funds or benefits resulting from blending portions of the Grain with other portions of the Grain);

(b) any rail incentives associated with shipping the Grain;

(c) reduced freight rates associated with shipping the Grain;

(d) any port terminal rebates associated with shipping the Grain; and

(e) any other activities which FARMCO may carry out which result in increased revenues to FARMCO.

6. Group of Farms Operating as a Unit

In the event that FARMCO is unable to obtain or does not have a Permit Book under the Canadian Wheat Board Act, FARMCO and the Producer confirm that the Producer's Land shall, at the option of FARMCO, be operated within a group of farms operating as a unit with other farms that are is covered by similar agreements entered into by FARMCO and other producers.

7. Board Grains

The Producer agrees and acknowledges that, until notified in writing by FARMCO, the Producer shall only deliver "grain" as such term is defined in the Canadian Wheat Board Act ("Board Grains").

8. Non - Board Grains

If FARMCO chooses to accept grains, other than Board Grains, at the Loading Location, it shall notify the Producer along with any other individuals or corporations with whom FARMCO has entered into similar agreements that wishes to accept non-Board Grains at the Loading Location. The notice must be given at least ◆ days prior to the date in which FARMCO intends to accept non-Board Grains and FARMCO shall not accept any non-Board Grains prior to that date.

9. Operating Procedures

During the term of this Agreement, the Producer and FARMCO agree that the sampling, delivery, handling, shipping of and payment for the Grain shall be governed by the Operating Procedures (the "Operating Procedures") set out in the attached Schedule "A". The Producer acknowledges and agrees that the Grain must be dealt with in accordance with the Operating Procedures. The Operating Procedures and the form of Commitment may be amended by FARMCO, in its sole

discretion, from time to time as it may reasonably determine to be necessary. FARMCO agrees to notify the Producer 30 days prior to any change in the Operating Procedures or the form of Commitment taking effect. In the event the Producer does not agree with the change in the Operating Procedures or form of Commitment, the Producer may terminate this Agreement at the end of the current Primary Term or Renewal Term, as the case may be, and if the Producer terminates this Agreement the changes to the Operating Procedures and the form of Commitment shall not apply to the Producer or this Agreement. If the Producer does not object to the change in the Operating Procedures or the form of Commitment within 10 days after receiving notice of the changes, the Producer shall be deemed to have accepted the changes.

10. Producer Cars

The Producer agrees and acknowledges that FARMCO shall make application for producer cars under section 87 of the Canada Grain Act and that Grain shall be loaded onto producer cars. Notwithstanding the foregoing, in the event that FARMCO is unable to successfully apply and secure producer cars under section 87 of the Canada Grain Act, the Producer hereby irrevocably appoints FARMCO as its attorney and grants a power of attorney to FARMCO to make application for Producer Cars under section 87 of the *Canada Grain Act* on behalf of the Producer and take all further steps that are necessary in order to load the Grain into producer cars. Notwithstanding the foregoing, the Producer agrees and acknowledges that FARMCO may, at its sole discretion, deliver the Grain to an elevator, as defined in the Canada Grain Act, or any other place allowed by law.

11. Canadian Wheat Board Contracts

The Producer acknowledges that FARMCO will be entering into contracts with the Canadian Wheat Board under the Canadian Wheat Board's contracting system based upon FARMCO's agreement with the Producer and other producers. The Producer acknowledges that FARMCO may be liable to the Canadian Wheat Board in damages for any unfulfilled contracts. Accordingly, the Producer acknowledges and agrees that it shall be liable to and shall indemnify FARMCO if the Producer fails to supply the Grain to FARMCO during the term of this Agreement. For greater certainty, the Producer shall be liable for and indemnify and save harmless FARMCO for any damages FARMCO incurs for failure to deliver the Grain to the Canadian Wheat Board as well as the value of any lost blending opportunities that FARMCO reasonably expected to obtain from the delivery of the Grain.

12. Service Charges

The Producer agrees to pay to FARMCO the amounts specified in paragraph 6 of the Operating Procedures for the provision of services by FARMCO specified in paragraph 5 of the Operating Procedures.

13. Title to Grain

Notwithstanding any other provision of this Agreement to the contrary, but subject to section 5 hereof and the Producer's obligation to deliver the Grain as set out in the Operating Procedures, all right, title and interest to the Grain shall remain in the Producer until such time as the Grain has been delivered to the Loading Location. Accordingly, FARMCO shall not be liable for the loss of or destruction to the Grain prior to: (1) the Producer delivering the Grain to the Loading Location, or (2) a third party, engaged by FARMCO, picking up the Grain at the Producer's

Land. FARMCO shall pay to the Producer the storage rate set out in any Commitment for the time in which any Grain is stored on the Producer's Land in a grain bin or any other storage facility prior to such Grain being delivered to the Loading Location of picked up by FARMCO or someone engaged by FARMCO.

14. Contingencies

If FARMCO is prevented by any contingency reasonably beyond its control from taking delivery of the Grain or providing the services to the Producer contemplated by this Agreement, the duties and obligations of FARMCO insofar as they are affected by the contingency, shall be suspended while (but only so long as) the contingency continues to prevent the performance of the said duties or obligations. Whenever prevented from providing such services by such contingency, FARMCO shall promptly notify the Producer of the contingency. Where the contingency permanently prevents FARMCO from providing the services to the Producer contemplated by this Agreement, this Agreement may be terminated at the option of either party upon 60 days notice. "Contingency" shall mean any one or more of the following events:

(a) any act of God, including storm, fire, flood, explosion or lightning;
(b) a war, revolution, insurrection, riot, blockade, or any other unlawful act against public order or authority;
(c) a strike, walk-out or other industrial disturbance either at the Loading Location or elsewhere in the grain handling and transportation system;
(d) congestion in the grain handling and transportation system caused by a shortage of railcars or otherwise; or
(e) any other event (whether or not of the kind enumerated in subparagraphs (a) to (d) of this section) which is not reasonably within the control of FARMCO.

15. Assignment

The Producer may assign this Agreement, with the prior written consent of FARMCO, which consent will not be unreasonably withheld. FARMCO may assign all of its rights and obligations under this Agreement without the consent of the Producer. Any assignee of the Producer or FARMCO will be bound by the terms of this Agreement and the attached Operating Procedures.

16. Default

If at any time the Producer is in default of its obligations under this Agreement and the default is not cured within ◆ days of the Producer receiving written notice of the default, in addition to any other remedies which FARMCO may have, FARMCO may unilaterally terminate this Agreement without further notice to the Producer.

17. Registration

The Producer agrees not to register this Agreement by way of caveat, as a lease or otherwise against title to the lands upon which the Loading Location is constructed.

18. Notices

Any notice or delivery required or permitted by this Agreement shall be in writing and delivered personally to the party to whom it is directed or sent by registered mail, postage

prepaid or sent by telecopier or e-mail, at or to the address or telecopier number of the parties set out below or to such other address, telecopier number or e-mail address as either party may from time to time designate to the other party:
To FARMCO:

_____
_____
_____
_____

To the Producer: at the address set out below.

19. Further Acts

FARMCO and the Producer and their respective successors and permitted assigns agree to execute and deliver any other documents and perform and cause to be performed any other acts and things as may be necessary or desirable in order to give effect to this Agreement.

20. Agreement Binding

This Agreement shall ensure to the benefit of and be binding upon the parties hereto and their respective successors and permitted assigns.

21. Plural and Gender

Whenever the singular and masculine are used throughout this Agreement, the same shall be construed as meaning the plural or the feminine or neuter where the context of the parties hereto so requires all covenants shall be deemed joint as well as several.

22. Entire Agreement

This writing sets forth all the terms and provisions of the Agreement made on the date hereof between the parties and no oral statement, representation, warranty or undertaking by either party prior to the execution hereof by any person purporting to act on behalf of either party shall have any validity or effect whatsoever, unless agreed to in writing by both parties.

THIS AGREEMENT has been signed by the parties this _____ day of _____, 2001.
[FARMCO]
Per: _____

Producer's Name (please print) _____
Address _____
Producer's Signature: _____

Schedule "A"

OPERATING PROCEDURES

1. Capitalized terms

Capitalized terms used in these Operating Procedures shall have the same meaning as set out in the Agreement to which these Operating Procedures are attached.

2. Sampling

The Producer agrees that a sample of each bin of the Grain shall be taken by:

(a) the Producer using technique identified in Appendix 1 attached hereto, as amended by FARMCO from time to time; or

(b) a qualified third party sampler selected by the Producer; while the Grain is still located on the Producer's Land.

3. Price for Grain

Following a review of that sampling, FARMCO will confirm in the Commitment, the grade which FARMCO guarantees to the Producer and FARMCO agrees that the Producer will receive an amount equal to the value of that grain at port, as determined by the Canadian Wheat Board in the case of Board Grains and otherwise as agreed to by the Producer and FARMCO, minus:

(a) FARMCO's administration fee identified in the Commitment;

(b) freight charges which shall be the single car freight rate as assessed by the railway at the closest available delivery point to where the grain is located and if the freight charges increase following the date of the Commitment and prior to the Grain being shipped to a port facility, FARMCO shall adjust the freight charges that are applicable in an equitable manner, in its sole discretion;

(c) the cleaning charges identified in the Commitment;

(d) the Canadian Grain Commission inspection charges identified in the Commitment;

(e) fees associated with Canadian Grain Commission or other official grading of the samples; and

(f) any other items that may be set out in the Commitment.

In determining the charges to be included in the Commitment, FARMCO may take into account any blending opportunities that result by blending a portion of the Grain with another portion of the Grain.

4. Delivery to the Loading Location

Once the Grain has been sampled as provided in paragraph 2 above, the Producer will deliver the Grain, or a portion thereof, to the Loading Location at such time and in such amounts as FARMCO determines and advises the Producer. Notwithstanding the foregoing, FARMCO may offer to the Producer options for the delivery of Grain to the Loading Location on terms and conditions offered by FARMCO including, without limitation, the following:

(a) the Producer delivers the Grain to a Loading Location or to any other point FARMCO may designate; or
(b) FARMCO engages a commercial trucking firm to pick up and deliver the Grain to the Loading Location.

In the case of section 4(b) above, the Producer hereby grants rights of ingress, access and egress over the Producer's Land to FARMCO and its agents for such purpose.

5. Freight Rate Incentives, Port Terminal Rebates and Blending Opportunities

The Producer agrees and acknowledges that FARMCO will or may:
(a) receive incentives from railway companies for the Grain;
(b) be able to negotiate more favourable freight rates with railway companies than the Producer could have obtained through other mechanisms;
(c) negotiate port terminal rebates for the Grain delivered to port facilities; and
(d) be able to blend the Grain with grain from other producers and therefore increase the overall value of the Grain.

The Producer agrees and acknowledges that any funds received by any of the foregoing activities will accrue to FARMCO and not to the Producer.

6. Services

FARMCO shall perform the following services for the Producer in respect of Grain:
(a) cause the sample of the Grain to be inspected and graded in accordance with the requirements of the Canada Grain Act;
(b) designate and advise the Producer when the Grain may or shall be delivered to the Loading Location or to any other designated point and the amount of the Grain to be so delivered;
(c) upon receipt of the Grain at the Loading Location or at the point where it is to be loaded onto a rail car, cause the Grain to be weighed and if the Grain is not delivered to a location with a scale then the Grain is to be weighed on unload at a port facility;
(d) upon delivery of the Grain to the Loading Location, issue to the Producer a receipt for the Grain delivered to the Loading Location, stating the dockage and net weight of the Grain if the Grain is weighed at the Loading Location; and
(e) if the Grain is not weighed at the Loading Location, FARMCO shall issue to the Producer a temporary receipt stating the approximate weight of the Grain and the percentage of dockage contained in it.

All services performed pursuant to paragraph 6 of these Operating Procedures will be in accordance with FARMCO's usual and customary practice and in accordance with the requirements of applicable law.

7. Payment for Services

The Producer agrees to pay FARMCO from time to time:
(a) the fees set out in the respective Commitment for providing the services set out in paragraph 5 of these Operating Procedures; and
(b) for other available services requested by the Producer at the rates normally charged by FARMCO, from time to time, for such services.

8. Timing of Payment

The amounts payable by the Producer pursuant to paragraph 7(a) of these Operating Procedures shall be deducted by FARMCO from the gross receipts from the Grain which FARMCO has caused to be delivered at the time that FARMCO receives payment for that Grain. The amounts payable by the Producer pursuant to paragraph 7(b) of these Operating Procedures shall be paid to FARMCO at the time FARMCO performs the requested services, in accordance with FARMCO's usual and customary practice in the operation of the Loading Location.

9. Grade of Grain

Notwithstanding any provision in a Commitment, the Producer guarantees that the Grain delivered to the Loading Location or of which FARMCO takes delivery shall be equivalent in all respect to the sample of the Grain which is identified in the Commitment. If the Grain is not equivalent in all respects, as determined by the official inspection of the Canadian Grain Commission or other designated body, the Producer agrees to accept responsibility for any lowering of the value of that Grain, and to accept as payment for the Grain an amount equal to the grade of the Grain actually delivered, minus the applicable deductions as described in section 2 above. The Producer shall, at the discretion of FARMCO, be liable to FARMCO for any lost blending opportunities that resulted from the Producer's failure to deliver Grain equivalent to the grade set out in the Commitment. In addition, the Producer agrees not to remove any portion of the Grain from a bin or add to a bin once that bin has been sampled in accordance with these Operating Procedures and that Grain is covered by a Commitment unless it is necessary to move the Grain or disturb the Grain for the purpose of preserving its condition, in which case, the Producer will notify FARMCO of the Producer's intent to move or disturb the Grain.

10. Payment

FARMCO agrees that it will order and ship producers cars in a timely manner as contract calls permit, and that it will make payments to the Producer relative to the amount of grain they have committed to FARMCO on a regular and timely basis, as agreed upon by FARMCO and the Producer and specified in the Commitment. If the Producer's Grain is loaded unblended to a single rail car, the weight and dockage on which the Producer receives payment shall be determined upon unload at port or other such point of sale.

11. Arbitration

Any disputes between the parties in respect of any of the matters referred to in this Agreement shall be settled exclusively by arbitration, without resort to court proceedings, in a timely fashion and in accordance with the procedures set forth in this Section 11. Either party may initiate arbitration (the "Initiating Party") by giving written notice of intention to arbitrate to the other party (the "Responding Party") stating the dispute to be arbitrated, the Initiating Party's position with respect to the dispute, a statement of the material facts upon which the Initiating Party intends to rely and a statement of the relief or remedy sought. If the parties have not agreed on

the selection of an arbitrator within 30 days after the notice is given, then the arbitrator shall be appointed in accordance with the procedures provided for in *The Arbitration Act, 1992*, S.S. 1992, c.A-24.1. The arbitration shall be held as quickly as possible and the decision of the arbitrator shall be rendered in writing as promptly as possible and, if reasonably possible, within 30 days following the conclusion of the arbitration proceedings. The decision of the arbitrator shall be final and binding upon the parties and shall not be subject to appeal, or review by certiorari or otherwise by, any court or tribunal whatsoever. Unless otherwise agreed by the parties, the arbitrator may, at the request of a party, grant any remedy and make any order (including without limitation, temporary or permanent injunctive orders), which could be awarded in and by a court of competent jurisdiction. The costs and expenses of the arbitration and the parties shall be borne by such of the parties and in such proportions as the arbitrator may determine to be appropriate. Any arbitration hereunder shall be held at ◆, Saskatchewan or at such other place as the parties may agree upon.

Appendix 1 to Operating Procedures

[Insert sampling technique to be used by the Producer]

Schedule "B"
COMMITMENT

This is a Commitment referred to in an Agreement between ◆ ("FARMCO") and _____ (the "Producer") dated ◆, as amended from time to time, (the "Agreement") whereby FARMCO and the Producer agreed to execute one or more Commitments to confirm the details on the grain to be committed under the Agreement.

1. The Producer agrees to commit the following grain for the time period specified below:

Tonnes	Grain	Bin ID number	Grade of Sample of Grain by Bin	Legal description of Producer's Land	Delivery Point Closest to Producer's Land	Delivery Period
						From To
						From To
						From To

2. Subject to the terms of the Agreement, FARMCO agrees to pay the Producer an amount using the price, as determined in the Agreement, based upon the following grade of the above noted Grain:

Tonnes	Grain	Bin ID number	Grade of Grain GUARANTEED by Bin

3. The Producer agrees to pay to FARMCO the following charges for the grain identified in section 1 above:
   (a) administration fee of $_____ per tonne;
   (b) cleaning fee of $_____ per tonne, if applicable;
   (c) Canadian Grain Commission inspection fee of $_____ per tonne;
   (d) freight rate of $_____ per tonne for Grain located at _____;
   (e) freight rate of $_____ per tonne for Grain located at _____ (attach additional sheet is necessary);
   (f) grading fees of $_____ per tonne;
   (g) if the Producer's Grain is out of condition, any charges related to fumigation, drying, or any similar treatment required to make the Producer's Grain saleable; and
   (h) if FARMCO arranges for the pick up of the Grain, a trucking fee as set out in Appendix 1, attached hereto; and

   the Producer hereby authorizes FARMCO to deduct such amounts from the amount paid to the Producer for the Grain.

4. FARMCO agrees to pay to the Producer:
   (a) a storage charge, for the time the grain identified in section 1 above is stored on the Producer's Land, of:
      (i) $_____ per tonne per _____ during the first _____ months;
      (ii) $_____ per tonne per _____ during the next _____ months; and
      (iii) $_____ per tonne per _____ for any time thereafter; and
   (b) a trucking fee, if the Producer delivers the Grain to a location other than the Delivery Point Closest to the Producer's Land indicated above, as set out in Appendix 1 attached hereto.

5. The Producer confirms that, until the Producer otherwise notifies FARMCO, the Grain shall be delivered to the Loading Location in the manner indicated with an "X" below:
   (a) _____ by the Producer
   (b) _____ by FARMCO or a commercial trucking firm engaged by FARMCO.

6. FARMCO and the Producer agree that payment to the Producer for the Grain committed under this Commitment shall be made at the following times or dates:

_____
_____
_____
_____
_____

7. Other provisions:

_____
_____
_____
_____

_____

_____.

THIS COMMITMENT has been signed by the parties this _____ day of _____, 2001.

[FARMCO]
Per: _____

Producer's Name (please print) _____

_____

Address _____

_____

_____

Producer's Signature: _____

Appendix 1

[insert schedule of trucking fees]

Appendix 10

FARMCO PROTOTYPE OPERATING PLAN

Prepared for

Grain Collection Alternatives Pilot Project

Travacon Research Limited

May, 2001

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INTRODUCTION

This document contains an operating plan for a prototypical operation based on the operating concepts developed in the Grain Collection Alternatives Pilot Project (the Project). Throughout this document, the prototypical company so described will be referred to as "Farmco". Input data descriptive of the Farmco operation was supplied by the Project, as is not necessarily representative of any specific territory.

Based upon these inputs, pro-forma financial statements are prepared for Farmco, and a financial analysis is conducted to evaluate the financial viability of the company. It is assumed that Farmco is organized as a Saskatchewan corporation.

COMPANY FACILITIES

The analysis assumes that Farmco would construct 6 facilities for receipt, handling and railcar loading, each consisting of the following equipment:

Table 1

Farmco Handling Facility Capital Expenditure (per facility)
Thousands of Dollars

Description	Amount
10 bins	140
Scale	70
Loading and unloading system	50
Power to site	15
Scale house	30
Car puller	10
Total	**315**

Each facility would be designed to handle 25-car blocks, and would use existing sidings assumed to be acquired without cost. The bins would store a portion of the product required to load a 25-car block; the residual would be trucked in during the car loading process. As an alternative to constructing new facilities, the company might choose to purchase existing facilities, if such are available.

In addition to the above, it is assumed that Farmco would provide a scale and an auger at four other sites at which producers would load cars, at a total cost of $140,000. Further, the company would invest $100,000 in grain sampling equipment. Thus, total initial investment in facilities and equipment would be $2,130,000.

HANDLING VOLUMES AND REVENUES

It is assumed that handling volumes for Farmco would be 270,000 tonnes in the first year of operation, 350,000 tonnes in the second year and 400,000 annually thereafter.

Based on a current average product price of $190/tonne, Table 2 following shows calculation of Farmco's average revenue per tonne.

Table 2

Farmco Estimated Average Revenue per Tonne

Kinds/Grade Percent of Deliveries	Amount $/Tonne
Average price	190.00
Adjustments	
Terminal Cleaning	(3.32)
Dockage	(1.90)
Canadian Grain Commission	(0.38)
Terminal Rebate (1)	1.75
Railway Incentive (2)	0.95
Blending Premium	2.00
Freight Consideration Rate	(35.00)
Net to Company	154.10

(1) Payable by terminal elevator
(2) Assumes 95% of rail shipments in 25-car blocks

OPERATING EXPENSES

Payments to Producers

Payments to producers have been based upon anticipated revenue receipts from the Canadian Wheat Board, as discussed in the previous section, less deductions for terminal cleaning, dockage, Canadian Grain Commission and the freight consideration rate, plus the blending premium, less a handling charge of $3.50 per tonne. Based on the data shown in Table 2, the payment to producers would be $147.90 per tonne.

It should be noted that the company might not find it to be in its overall best interest to draw down grain from all producers at a uniform rate throughout the year. Nonetheless, recognizing the cash flow requirements of individual producers, the company will plan to make cash payments for contracted volumes at the same rate to all producers throughout the crop year.

General and Administration

Table 3 shows estimated annual expenses for general and administration, including employee benefits. With respect to Table 3, the job category Producer Sales Representative consists of individuals who will deal directly with individual producers respecting contracting for delivery of their grains into the company's facilities. The four Customer Service Clerk positions shown in Table 3 would be involved in ongoing telephone contact with individual producers respecting delivery of their grains during the operating year and with respect to subsequent cash transactions involving delivered crops.

Table 3

Farmco General and Administration Expenses

Item	Annual Amount $000
Salaries & Wages (1)	
1 Manager	70
1 Assistant Manager	55
2 Accounting Clerks	70
3 Customer Service Clerks	115
3 Producer Sales Representatives	115
Total Salaries & Wages (1)	425
Office Rental	5
Computing	15
Automobile Transportation	15
Supplies	10
Professional Services	10
Telephone	15
Travel	10
Advertising	5
Directors	15
Shareholder Communications	10
Other	10
Total	545

(1) Includes employee benefits

Grain Handling Expenses

Annual costs at each handling site are estimated at $6,500 for insurance, $3,000 for utilities, $2,000 for maintenance and $3,000 for property taxes, for a total of $14,500 per facility.

Trucking Costs

Payments from Farmco to producers would be based on delivery at producer expense to his closest Farmco delivery point. Farmco may direct that some deliveries be to other delivery points, in which

case Farmco would compensate such producers for incremental trucking costs beyond the closest delivery point. It is estimated that, for an overall volume of 270,000 tonnes, such incremental trucking costs would amount to $100,000.

Storage Costs

Farmco would compensate producers for on-farm storage. It is estimated that such costs would average $2.00 per tonne delivered.

Producer Rebates

If sufficient cash is available after payment of shareholder dividends (see next section), the surplus would be distributed as a rebate to delivering producers. The financial analysis described subsequently developed estimates that such rebates would fluctuate in the range $0.00 - $2.00 per tonne, averaging $1.70 per tonne.

FINANCING

Initial Cash Requirements

In addition to the expenditure of $2,130,000 for facilities previously discussed, the company would have initial cash requirements of $50,000 for startup costs and $70,000 for working capital, for a total initial cash requirement of $2,250,000.

Commercial Debt

It is assumed that the company would obtain commercial debt in the amount of $1,250,000, bearing interest at an annual rate of 11%, and repayable in blended monthly payments of principal and interest over a 15-year term.

Equity

The balance of the initial cash requirement, or $1,000,000, would be obtained from issuance of common shares. Depending on cash availability, dividends would be paid at a rate of 10% annually.

FINANCIAL ANALYSIS

Based upon the foregoing input information, Table 4 shows anticipated cash flows based on anticipated traffic volumes for the first three years of operation, assuming 2% annual inflation in revenues and cash operating expenses.

Table 4

Farmco Anticipated Cash Flows
Amounts in Thousands, except Amounts per Tonne

Year	1	2	3
Tonnes handled	270	350	400
Revenues	41,607	55,014	64,130
Cash operating expenses			
Payments to producers (1)	39,933	52,911	61,913
General & administration	545	556	567
Handling facilities	87	89	91
Trucking	100	132	154
Storage	540	714	832
Total	41,205	54,401	63,557
Cash flow from operations	402	612	573
Interest income	3	6	17
Debt service	(170)	(170)	(170)
Income taxes paid	(10)	(82)	(80)
Shareholder dividends	(100)	(100)	(100)
Other cash flows	(34)	(13)	1
Net cash flow	90	253	241
End of year cash balance	160	413	654
Producer rebate (2)	110	363	604
- per tonne (2)	0.41	1.04	1.51

(1) Includes prior year producer rebates
(2) Payable in following year

A financial viability analysis was conducted to assess the viability of the operating plan and to develop measures of company performance. In conducting this evaluation, company operation was

simulated over a 15-year period, developing pro-forma financial statements. It was assumed that cash revenues and expenditures would be subject to 2% annual inflation. In conducting this analysis, the variable nature of the grain business was explicitly taken into account by varying the company's handled volume from year-to-year about its average level in a random manner, based upon historic variations in year-to-year grain production. This process was repeated 100 times, and the results averaged to develop measures of the expected company performance.

Based upon results of this analysis, it is concluded that the company would be viable based upon the inputs discussed previously herein. Producer rebates would be expected to be $1.20 per tonne in the first year, would fully offset the handling charge in the second year, and would exceed the handling charge by up to $1.00 per tonne thereafter. Shareholders' equity would be expected to more than double, to about $2.7 millions, over 15 years.